This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images, please do not report the images to the Image Problem Mailbox.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
10 May 2001 (10.05.2001)

PCT

(10) International Publication Number
WO 01/33381 A1

(51) International Patent Classification[7]: G06F 15/00, 15/16, 17/30, B41B 15/00

(21) International Application Number: PCT/US00/30536

(22) International Filing Date:
3 November 2000 (03.11.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/163,626 4 November 1999 (04.11.1999) US
09/570,583 12 May 2000 (12.05.2000) US

(71) Applicant *(for all designated States except US)*: **XDRIVE, INC** [US/US]; Attn: Legal Dept., 3002 Pennsylvania Avenue, Santa Monica, CA 90404 (US).

(72) Inventors; and

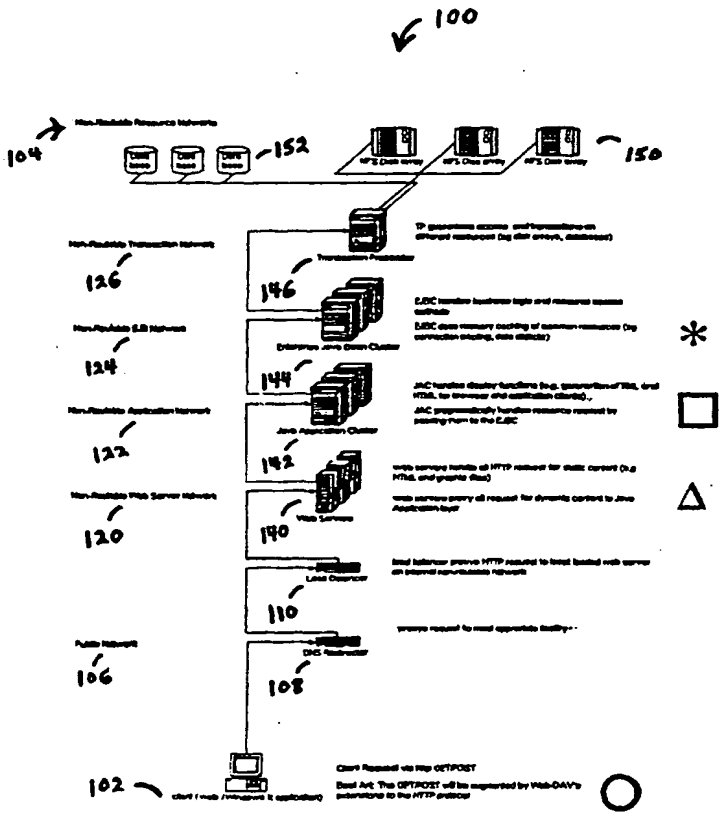
(75) Inventors/Applicants *(for US only)*: **O'BRIEN, Brett** [US/US]; XDrive, Inc., 3002 Pennsylvania Avenue, Santa Monica, CA 90404 (US). **WHITELEY, Sean** [US/US]; XDrive, Inc., 3002 Pennsylvania Avenue, Santa Monica, CA 90404 (US). **MCGREGOR, Lucas** [US/US]; XDrive, Inc., 3002 Pennsylvania Avenue, Santa Monica, CA 90404 (US). **HALD, Martin** [DK/US]; XDrive, Inc., 3002 Pennsylvania Avenue, Santa Monica, CA 90404 (US).

(74) Agents: **JORDAN, Andrew** et al.; Cislo & Thomas LLP, Suite 900, 233 Wilshire Boulevard, Santa Monica, CA 90401-1211 (US).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,

[Continued on next page]

(54) Title: SHARED INTERNET STORAGE RESOURCE, USER INTERFACE SYSTEM, AND METHOD



(57) Abstract: The shared internet storage resources provides Internet-based file storage, retrieval, access, control, and manipulation for user. Additionally, an easy-to-use user interface is provided both for a browser or stand-alone application. The entire method provides means by which users can establish, use, and maintain files on the internet in a manner remote from their local computers yet in a manner that is similar to the file manipulation used on their local computers. A high capacity or other storage system is attached to the internet via an optional internet network that also serves to generate and direct metadata regarding the stored files. A web server (140) using a CGI, Java-based, or other interface transmits and retrieves TCP/IP packets or other internet information through a load balancer/firewall (110) by using XML to wrap the data packets. File instructions may be transmitted over the Internet to the Shared Resource System. The user's account may be password protected so that only the user may access his or her files. On the user's side, a stand-alone client application (142) or JavaScript object interpreted through a browser provide two means by which the XML or other markup language data stream may be received and put to use by the user. Internet-to-internet file transfer may be effected by directly downloading to the user's account space.

WO 01/33381 A1

BNSDOCID: <WO 01333381A1 (>

NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) **Designated States** *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— *With international search report.*

— *Before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments.*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INSDOCID: <WO 0133381A1 I >

SHARED INTERNET STORAGE RESOURCE, USER INTERFACE SYSTEM, AND METHOD

TECHNICAL FIELD

This invention relates to resources on computer networks, particularly the Internet, and more particularly to a file storage and retrieval system that is available worldwide via the Internet which additionally allows a direct transfer of Internet files to an Internet storage, retrieval, and sharing resource. The present invention acts in the manner of a "Internet hard disk" or "Internet hard drive" to provide online storage and retrieval resources for users.

BACKGROUND ART

The Internet is the worldwide computer network making available a vast number of computer and information resources to institutions and individuals. A significant part of the Internet is the worldwide web that allows for web pages to be written in HTML and transmitted upon demand throughout the Internet. Recent developments have better established the use of XML (Extensible Markup Language) as a subset of SGML (Standard Generalized Markup Language, ISO standard 8879:1986). FTP (File Transfer Protocol) provides means by which files may be transferred over the Internet. All of these protocols are generally well known in the art, and collateral resources can easily be obtained to describe these further.

Patents relevant to the present invention include U.S. Patent No. 5,771,354 issued to Christopher Crawford on June 23, 1998 for an Internet Online Backup System, and U.S. Patent No. 5,901,228 issued to Christopher Crawford on May 4, 1999 for a Commercial Online Backup Service.

Additionally, portable programming systems such as Java®, JavaBeans, and JavaScript have been extensively developed with an anticipation of future portability across the vast network that is the Internet. Java®-related systems allow for object-oriented programming whereby objects or "beans" allow the passing of self-contained modules with associated processing methods that are used to act upon the accompanying data. Consequently, the "bean" can travel through a network and, under appropriate circumstances, have certain processes activated allowing manipulation of the information contained in the bean.

Advancements in Java®-related systems have given rise to the Enterprise JavaBean™ (EJB). The Enterprise JavaBean™ allows for clustering of servers such that the bean is given independence from specific servers on the system, yet can be activated or "instantiated" such that error recovery is easier, the system as a whole is more robust, and processing of the bean can be performed asynchronously so that all events do not have to happen at a pre-set time or serially/one after the other.

Enterprise JavaBeans™/EJBs allow serialization of beans. Such serialization allows the bean to be represented as a data stream of determined length. In essence, this is just a data file that is interpreted in the proper context, much the same as any electronic information file. Such serialization of the EJB allows it to be replicated and stored in case of catastrophic failure of a preferred server or the like.

If the server upon which the instantiated EJB dies, goes down, or fails, a previously replicated twin can be used to continue the process and allow for error recovery. More information about Enterprise JavaBeans™ technology can be found in the white paper, "Enterprise JavaBeans™ Technology: Server Component Model for the Java™ Platform" by Anne Thomas, revised December 1998, prepared for Sun Microsystems, Inc. and published/made available by the Patricia Seybold Group of Boston, Massachusetts.

Due to the nature of new technologies, terms such as "bean" or "instantiated" may seem unfamiliar to those new

BNSDOCID: <WO 01333381A1 >

to the pertinent art. Reasons for this include the difficulty of communicating quickly new and complex subjects as well as the good-humored nature of those who intensely pursue the establishment of new technology, particularly software systems. Consequently, for Java®-related systems, a coffee theme is often present that indicates to those knowledgeable in the art the general subject matter of interest. While distinctions may be subtle in the art, they can be very important and serve the ends of those attempting to establish, share, and forward the technology.

Generally, home pages or other web pages are requested by the user through designation of the URL (Uniform Resource Locator). With the transmission to the user via TCP/IP protocol, the information present at the URL (and generally a file located somewhere on a computer) is transmitted to the user. The file may have links, or pointers, to other resources including images, graphics, audio or video streams, or other resources. Mark-up language is used on the Internet in an attempt to provide an open-ended structure by which information of any sort that can be stored electronically (or perhaps even otherwise) can be made available to an end user on demand. As such, the Internet is seen as a powerful tool making almost any information resource available to any computer or to any person using a computer.

Over the past several years, the personal computer has increased in power and capacity as commercial demand has driven the research and development of producers and vendors. It is now not uncommon to be able to easily find an Intel-manufactured 500 megahertz Pentium®-based system having well over 10 gigabytes of hard disk space, as well as 32 - 256 megabytes of RAM. As such, the power by which files may be received and acted upon by the local user through his or her PC has kept pace with the advances in technology.

However, there currently remain obstacles to universal access to an individual's own information stored on his or her computer. First of all, computers are very heavy. They are bulky. They generally weigh several kilograms and are not easily transportable. Lightweight laptop computers or the like generally do not have the same resources available to the user as a regular PC. Additionally, access to local area networks (LANs) is generally not available once the computer leaves the premises occupied by the LAN. Additionally, Internet access is often restricted by the use of a modem. Modems generally provide data transmission speeds on the order of 56 kilobits per second. This is approximately the same as 7 kilobytes per second. However, headers and other information are required to properly transmit information over the Internet and increase the effective size of files.

Even with the increased availability of broad band access to the Internet, it becomes an important feature of electronic information processing and the like in order to provide resident resources on the Internet. Such resources could include the sharing of files and the like in a manner that are easy to use and understand.

Due to these and other restrictions regarding data transport, transmission, and reception, a need has arisen for means by which files and other data may be available worldwide through the Internet and not tied to a local computer. The present invention addresses this demand by providing means by which files and other data may be stored on the Internet and made available worldwide through the Internet.

DISCLOSURE OF INVENTION

The present invention provides an "Internet hard drive" or "Internet hard disk" to and from which files may be stored and retrieved. Denominated commercially as "X:Drive," the present invention allows users to store files of foreseeably any type on a resource available throughout the Internet. Once available to the Internet, the files stored on the user's X:Drive are available to the same extent as the Internet, namely worldwide.

Note should be made that the term "X:Drive" refers both to the system as a whole and to the individual space allocated to an individual user. Consequently, reference is sometimes made herein to the X:Drive system or to X:Drive to refer to the system as a whole. At other times, the term X:Drive indicates the user's individual X:Drive, or allocated

space. The different uses are indicated by context.

In order to effect the Shared Internet Storage Resource of the present invention, a central or distributed storage facility is provided. First and foremost is the high-speed access storage facility where files are actually stored. Such individual storage areas may be allocated in individual limited allotments, or be left open-ended and limited only by the capacity of the physical devices responsible for storage. Metadata, that is data about the files stored on the network hard drives or other storage devices, is generated and stored in a separate database. The database of metadata (the metadatabase) and the network-attached storage facility may be linked by an internal network. It is possible for the database to be stored on the same network storage facility or device on which user files are also stored. System management may select whether or not to distribute or consolidate the database with the network storage.

Also attached to the internal network is a web server that serves to generate and transmit the information to the Internet, and ultimately the user. The web server files may pass through a load balancer and/or firewall before proceeding on to the Internet. The same is similarly true for information coming into the web server from the Internet.

XML may be used in combination with JavaScript or the like to provide two means by which the Shared Internet Storage Resource of the present invention may be achieved. The first is a JavaScript object which may be transmitted to a browser program running on the user's computer. Such browsers may include ones that are well known, including Netscape® Communicator and Microsoft® Internet Explorer. Alternatively, a stand-alone application may be installed and stored upon the user's computer. This stand-alone application serves to intermediate the user commands with the web server and ultimately the metadatabase in the Internet storage device.

As an additional enhancement, the user interface may be a client program that meshes seamlessly with standard user presentations in WYSIWYG (what you see is what you get) graphic user interfaces (GUIs). As such, a drive may be shown on the user's computer and may be denominated "x:" (or "y:" or "z:", etc., depending upon user preferences). The user can then read from or write to the x:\ Shared Internet Storage Resource drive much in the same way as you would the local a:\ and c:\ hard drive.

When the user shuts down his or her computer, information that is stored on the Shared Internet Storage Resource of the present invention remains on the Internet. The user can then access such information from another computer, another geographic location, or even give permission to share files on the Shared Internet Storage Resource with others. Password protection or other security protocols may be used to limit or discriminate access to the user's files.

The Shared Internet Storage Resource of the present invention allows for direct Internet-to-Internet file transfer to a user's allocated X:Drive file space in a process referred to as "Skip the Download" or "Save to My Xdrive."

BRIEF DESCRIPTION OF DRAWINGS

Figure 1 is a schematic view of the X:Drive system of the present invention. The different tier levels are shown, along with the marking indicia of a circle, triangle, square, and star/asterisk corresponding to the same indicia in Figure 3.

Figure 2 is a schematic view of Java® library objects operating in the transactions or data exchanges occurring in the present invention.

Figure 3 is a detailed flow diagram showing the operation of the present invention. Indicia including a circle, a triangle, a square, and a star/asterisk correspond to tier levels shown in Figure 1 and indicate the level of operation of the steps shown in the flowchart of Figure 3.

Figure 4 is a flowchart showing the operation of the XDFile Enterprise JavaBean™ (EJB) used in the present invention.

RNSDOCID: <WO 01333381A1 I >

Figure 5 is an overview of the Java® architecture used to effect transactions in the present invention.

Figure 6 is an alternative schematic diagram of the Java® architecture shown in Figure 5.

Figure 7 is a schematic and flowchart diagram showing the IO (input/output) for the database transactions of the present invention.

Figure 8 is a schematic diagram of the data recovery process as effected by the FileIO component of the XDFile object used in the present invention.

Figure 9 is a schematic depiction of failure recovery elements.

Figure 10 is a schematic and flowchart diagram showing virus protection effected in the present invention.

Figure 11 is a schematic and flowchart diagram of the Internet-to-resource transfer ("Skip the Download"/"Save to My Xdrive") as set forth in the present invention.

Figure 12 is a schematic and flowchart diagram of the client system used in the present invention.

Figure 13 is a Windows™ desktop display showing both the client and web-browser applications.

Figure 14 is a display of a web browser pointing to a user's X:Drive.

BRIEF DESCRIPTION OF APPENDICES

Appendix 1 is a listing of web site/server code use to achieve the present invention.

Appendix 2 is a listing of the code used on the client side to achieve the present invention in a Microsoft® Windows™ environment.

Appendix 3 is a listing of the JavaScript code used to achieve the present invention in a Sun Microsystems® Java® environment (including one on a browser).

MODE(S) FOR CARRYING OUT THE INVENTION

The detailed description set forth below in connection with the appended drawings is intended as a description of presently-preferred embodiments of the invention and is not intended to represent the only forms in which the present invention may be constructed and/or utilized. The description sets forth the functions and the sequence of steps for constructing and operating the invention in connection with the illustrated embodiments. However, it is to be understood that the same or equivalent functions and sequences may be accomplished by different embodiments that are also intended to be encompassed within the spirit and scope of the invention.

Appendices 1, 2, and 3 provide the source code for, respectively, the Web Site/Server Code of the X:Drive Shared Internet Storage Resource system of the present invention; the Windows Client Code; and the JavaScript Listings for the present invention. These Appendices are incorporated herein by this reference thereto as if set out in their entirety. It is contemplated that these Appendices provide a full, complete, and enabling disclosure to those of ordinary skill in the art or less by which the present invention may be achieved.

Additionally, the reference numbers used in conjunction with the figures are numbered such that the 100's place of the number indicates the number of the drawing figure. For example, the 600 series of reference numbers refers to Figure 6, while the 200 series refers to elements shown in Figure 2.

The present invention provides a method by which an Internet hard disk or hard drive may be achieved in a manner similar to a hard disk or hard drive available locally to the individual on the local computer. Additionally, as Internet use becomes a more familiar and everyday event for people, the resources provided by the present invention may allow the actual use of the Internet hard drive or X:Drive set forth herein to act as such a resource with the files being called up for execution for programs available and processed either locally and/or over the Internet. In light of the

foregoing, it can be seen that the present invention may act as a bridge or may pave the way towards a more inter-networked community for the use and processing of electronic information.

The virtual disk drive provided by the present invention may be selectively shared with others or kept entirely private. Additionally, and as set forth in more detail below, the use of a metadatabase provides quicker access and the ability to distribute the information regarding the legion of X:Drive accounts over a wide geographic area, enabling redundant preservation of user information by server clusters implementing Enterprise JavaBeans® (EJBs), or otherwise.

The Shared Internet Storage Resource, User Interface System, and Method set forth herein is generally referred to as "X:Drive." Context reveals whether or not the term X:Drive is referring either to the system as a whole or the individual's own account.

The X:Drive system of the present invention uses network application practices and may rely upon Java® Enterprise JavaBeans™ (EJBs) to enable distributed and clustered computing and file management environment. Along with such Java®-based and network-oriented design, the X:Drive system of the present invention also contemplates the use of open programming standards such as XML and Web-DAV (Web-based Distributed Authoring and Versioning). The use of such technology is foreseen as providing wide support by the user community as well as speed and development, refinement, and polishing.

As shown in Figure 1, the X:Drive system **100** has a multi-tiered, network-based application infrastructure. The multi-tiered nature of the system allows it to separate operations in an efficient manner. The network-based aspects of the X:Drive system allows it to disperse resources geographically as well as allow a high degree of communication between different aspects or facets of the system.

The X:Drive system may be considered enabling technology as a medium that is independent of the applications and uses to which it is applied. The X:Drive system is currently based on object-oriented principles with each application layer responsible for a discreet functionality or aspect of operation. Both hardware and software resources may then successfully experience heavy re-use with both scalability and flexibility inherently provided. While these advantageous aspects of the X:Drive system are achieved, as a multi-tiered system, X:Drive involves a higher cost of complexity and planning. Thus, those who would seek to wrongly copy the X:Drive system would do so without accruing the great expense in time and money necessary to achieve the present X:Drive system. They would ride on the backs of those who not only developed the system, but also those who got it to work right and in a commercially-reliable manner.

The use of tiers in the X:Drive system of the present invention is realized in both the network systems and the application systems involved in achieving X:Drive.

As shown in Figure 1, a variety of tiers, or layers, are present between the client **102** and the ultimate data resources **104**. Between the client **102** and the data resources **104**, are one or more layers or tiers, accomplishing the following.

The client **102** may be coupled to a public network **106** (such as the Internet) that may include a DNS redirector **108** as well as a load balancer **110**. The public network **106** may then lead into a web server network **120**. The web server may then lead into an application network **122**, which in turn leads into an EJB (Enterprise JavaBeans™) network **124**. The EJB network **124** may lead into a transaction network **126**, which in turn leads into the data resources **104**.

The client **102** may be either a web- or browser-based application or an application resident on a Windows™ X system (the X indicating the version of Windows applicable, i.e., Windows® 95, Windows® 98, Windows® 2000, etc.). Requests generally originate from the client as the X:Drive system **100** is one that operates at the command of users directing the client program. Client requests may be made versus the Hypertext Transfer Protocol (HTTP) GET/POST

BNSDOCID: <WO 0133381A1 >

function. In a preferred embodiment, the GET/POST operation may be augmented with Web-DAV extensions to the HTTP protocol. Commands are transmitted by the client **102** are sent to the DNS redirector **108**, which then isolate the request via a proxy server process. A proxy server process prevents a direct connection between the client **102** and the other downstream resources in the X:Drive system **100**. Such proxy serving prevents inadvertent or mischievous disruption of service by allowing only certain commands or information to be propagated through the X:Drive system **100**. This prevents mischievous users from disrupting the system as such rogue commands are intercepted by the proxy server and denied further propagation.

After the client command has passed through the DNS redirector/proxy server **108**, the request by the client **102** is then directed to the most appropriate facility. As the X:Drive system is scalable, facilities may be distributed geographically, even over the face of the globe. This allows, at the outset, more efficiencies to take place in the X:Drive system **100** of the present invention so that more users may be served more quickly and so that the advantageous features of the X:Drive system may be realized by the widest number of users in the quickest way possible.

Due to the construction and architecture of the X:Drive system **100**, a number of machines/servers running a number of different processes may be distributed over a wide area. Broad band or high-speed access as provided by Internet backbone or the like may allow the X:Drive system to be effectively carried out over the entire face of the planet. The scalability and flexibility of the present invention augments its utility. Such advantages are further advanced by efficient use of the resources so that greater and better service can be provided.

Upon receiving the request from the client **102**, the DNS redirector **108** transmits the requests on to a load balancer which may provide a second proxy process under HTTP protocol and transmit the request to the least-loaded and most-available web server on an internal, non-routable, or other server network **120**.

The web server network **120** may be non-routable and may comprise a number of individual machines or servers processing the HTTP or other requests from one or more load balancers **110**. Each of the web servers **140** in the network **120** may handle HTTP requests for static content, such as HTML and graphic files. The web servers may proxy all requests for dynamic content to a Java® application network **122**.

As used in the X:Drive system **100** of the present invention, the Java® application networks may be non-routable. The use of non-routable facilities in the X:Drive system **100** of the present invention indicates their operation in a local area network (LAN). However, between tiers, the individual networks themselves may be available such that a web server **140** in Illinois may pass requests for dynamic content to Java® application clusters **122** in Wisconsin.

Each Java® application cluster **122** may be composed of a number of Java® application servers **142** with each server **142** handling display functions necessary for user accounts, including the generation of XML, HTML, and other instructing displays for either browser or application clients **102**. If a Java® application cluster **122** receives a resource request from the web server tier **120**, the Java® application cluster **122** will pass the resource request onto the Enterprise JavaBean™ EJB network tier **124**.

As for the web server **120** and Java® application networks **122**, the EJB network **124** may also be non-routable and operate upon a LAN. The EJB network may be an EJB cluster having a number of EJB servers **144**. Each EJB cluster handles the business logic and resource access methods and protocols required for the resource requests and management. The EJB cluster (EJBC) caches memory of common resources such as the pooling of data connections and the like, as well as data objects. Resource access requests and transmissions are then passed out to the transaction network tier **126**, which may also be non-routable. The transaction network tier **126** has a transaction processor **146** which controls, operates, and guarantees access and transactions on different resources. These different resources are the ultimate data resources **104** that may include NFS (Network File Server) disk arrays **150** and databases **152**. The NFS

disk arrays **150** may supply the actual storage capacity for the files of generally any size. The databases **152** comprise records of information regarding each of the files (metadata) stored by the NFS disk arrays **150** under the X:Drive system **100**.

By bifurcating the file information in databases **152** separate from the actual files themselves on the NFS disk arrays **150**, file information and user queries can be handled much more quickly as display components of the present invention are important to provide the user information regarding the status and availability of the files stored on the X:Drive system **100**. Consequently, although a user may have a hundred separate files in an X:Drive directory, he or she may be only interested in one. Consequently in order to provide the user the information necessary to make the decision as to which file to receive, move, rename, delete, or store, the use of the database provides a very quick and easy means by which such user requests can be satisfied. It is anticipated that the actual use of the file storage facilities on the NFS disk arrays **150** or the like may comprise only a part of the operations of the present invention. Having the ability to display, select, and determine file operations is one of the useful advantages provided by the X:Drive system **100** of the present invention.

Note should be taken of the non-numerical indicia present in Figure 1. Most notably, a circle is associated with the client **102**, a triangle with the Java® application cluster **122**, a square with the EJB network **124**, and a star/asterisk with the transaction network. These non-numerical indicia correspond to those set forth in Figure 3. As different actions are performed at different tiers in the present invention, the non-numerical indicia provide an easy or visual means by which the operation of the different tiers can be indicated in Figure 3.

Figure 2 shows a logic diagram in sequence structure for the Java® library objects used in the X:Drive system **100** of the present invention. Generally, throughout the description of the X:Drive system **100** of the present invention, the prefix XD indicates "X:Drive." For example, in Figure 2 the steps/status indicators of XDError stands for X:Drive Error, and XDXML stands for X:Drive Extensible Markup Language. Likewise, the use of the term XDFile indicates X:Drive File as a Java® library object effecting and intermediating the file operations of the present invention.

In Figure 2, the Java® system **200** allows operations to be performed on the metadatabase **202** and the operating system (OS) File System **204**. Additionally, the XDFile object **210** may activate or instantiate the Database.Search object **216**. The XDFile object **210** may be activated, or invoked, by the FileAction object **220**. The FileAction object **220** may also activate the Database.Search **216** and Database.BigSearch **222** objects. Operations of the Java® library objects in the system **200** as shown in Figure 2 may be contingent upon the SessionSecurity object **224**, which may instantiate or use the Database.Search object **216** and/or the Database.Transaction object **214**. The SessionSecurity object **224** may return a separate object **226** to the UserData object **230**. The Database object **236** may inherit or transmit from its Transaction **214**, Search **216**, and/or BigSearch **222** objects.

The information generated may then be transmitted to the Database **202** for meta-information and the OS File System **204** for the actual data. If an error is generated during the operation of the Java® library object system **200**, an XDError object **240** may serve to handle the error while a successful operation may be returned in the form of the XDXML object **242**. In the Java® library object system **200** of Figure 2, the Database **202** may contain intelligence or programming for connection to SQL databases and the like. Options regarding the operations of the database **202** may be read from a configuration file. The Database object **236** may be able to connect multiple databases for redundancy in the case of repeated or redundantly archived information, or for functionality in order to connect to that database which responds most quickly to the requests and commands.

The Database object **236** determines which database operation to perform and/or to which database to send operations based on the type of request it receives. For example, transaction requests may demand a separate database

BNSDOCID: <WO 0133381A1 >

from those of regular query and BigSearch **222** requests. In order to maintain more efficient operation, the Database object **236** generally sends session users to the same database whenever possible so that latency and database replication is not passed on to the user.

The Database.Transaction object **214** is able to handle larger SQL statements such as those that would cause a load on the database. The Database.Transaction object **214** may spawn children classes that handle the transaction logic in order for more efficient operation.

The Database.Search object **216** is designed to handle smaller SQL statements and has children classes for specific search types, such as those along anticipated and common fields or types of information.

The Database.BigSearch object **222** handles larger, non-transactional SQL statements such as those used for reports in system accounting, monitoring, or otherwise. Children classes of the Database.BigSearch object **222** would handle specific large searches such as those that might be implemented on a monthly or other periodic basis.

The FileIO object **212** inherits and overrides Java®'s data file object. The file object contains logic to engage multiple disks or resources for redundancy and/or functionality and contains the functionalities necessary to manipulate files on the OS File System **204**. The FileIO object **212** may react to the JMS (Java Messaging Service) events triggered by events on the disks of the OS File System **204**.

Alternatively, one or more monitoring objects may be used to gather pertinent status information regarding the OS File System **204**. When monitoring objects are used, the FileIO objects then query the common monitoring objects to determine the state of the system. In the present system, the monitoring object is denominated the Mount Point Status bean, or MPS bean, **534** (Figures 5 and 9).

Additionally, disk level transactions are carried out by the FileIO object **212**. Under the management of the FileIO object **212**, user accounts are able to span or traverse several disks. The spanning of such several disks enables better recovery from failure should an error occur or system resources become unavailable in an unpredictable manner. The XDFile object **210** uses FileIO **212** to handle the file system transactions. By using the Database.Transaction file object, the XDFile object **210** handles database file transactions. The XDFile object **210** coordinates transactions for both the FileIO object **212** and the Database.Transaction file object **214** to keep both synchronized and to handle failure should it occur.

The UserData object **230** holds user data for a session of the X:Drive system. A session is basically a span of time for which a user engages the X:Drive system. Methods are included in the UserData object **230** to manipulate the user status, so that the activity may be monitored, as well as whether or not the user has logged in.

The SessionSecurity object **224** uses web logic session mechanisms to create the UserData object **230**. It does this by returning a separate object **226**. The SessionSecurity object **224** authenticates a user's login and expires old sessions with re-direction of such old sessions to appropriate pages.

The FileAction object **220** may have children classes and contain logic for determining request types such as user requests, administration requests, etc. Tests for file action requests such as quotas and permissions, etc., may also be handled by the FileAction object **220**. The FileAction object **220** accesses the file methods in the XDFile object **210**.

The XDError object **240** reads a configuration file of error lists which gives each error an I.D. number. Such error lists preferably pivot on the language in which the X:Drive system **100** of the present invention is programmed. Such lists should also be able to pivot on the partner with which the X:Drive system **100** operates. Default values for the lists may be to X:Drive errors in the English language. The XDError object **240** preferably holds errors in a stack and returns any such errors from the stack. Additionally, the XDError object **240** preferably accepts new errors by code or by message.

The XDXML object 242 accepts an object and delivers as output an XML representation of a transaction or status requested by the user or client software.

Figure 3 shows the data flow through the X:Drive system 100 of the present invention, particularly that as reflected by the tiered configuration shown in Figure 1. From a starting point 300, a request is sent by HTTP POST/GET command at step 302. Web-DAV protocol may also be used and is currently considered preferable. The send request is implemented on the client 102 and is evaluated by the web server 120 as a request for static content in step 304. If the request is for static content, the file is served by the web server 120 at step 306, and the file is displayed at step 308 by the client 102.

If at step 304 the request for static content is evaluated as negative, a proxy request is issued by the web server network 120 to the Java® application cluster 122 at step 312. The request is received by the Java® application cluster (JAC) 122 and submitted to a servlet at step 314. The Java® application cluster (JAC) 122 then parses the request header at step 316. The Enterprise JavaBean™ (EJB) network 124 then authenticates the request at step 318. If authentication cannot be achieved, process control is then re-directed to the re-login page via the JAC network 122 at step 320. If authentication succeeds at step 318, the JAC network 122 then parses the multi-part form data at step 324.

The JAC network 122 then determines the type of request at step 326. The request is then submitted to the FileAction EJB 220 at step 328. The EJB network 124 then evaluates the request at step 330 in order to ensure that all the business rules and other applicable limitations are met, such as quota limitations, permissions, and the like. If the evaluation is successful at step 330, the EJB network 124 then submits the request to the XDFile EJB 210 at step 332 and on to the transaction processor 146. The appropriate actions are then taken via the transactional database 152 and the disk arrays 150. If the business rule evaluation 330 fails, an error may be generated and, as for other errors in the data flow process of Figure 3, a session error object 334 may be generated in a session error stack 336.

In effecting the data transfer to the ultimate system resources 104, evaluation is made as to the operation in step 340. If the operation is not a data read operation such as a directory listing or file read, the error stack is checked at step 342. If an error has occurred, the error status is sent to the client 102 at step 344. The client 102 then accepts the transmitted XML code and renders the appropriate display for the user at step 346. If the error stack evaluation step 342 does not reveal any error, a success message is generated at step 350, and the subsequently-generated XML is received by the client 102 and displayed by the user at step 346.

If at the evaluation step 340, the operation is not a data read action, the error stack is checked at step 352 much in the same way as it was at step 342. If an error has occurred, the error status is sent to the client 102 at step 354. The error status message is then received as XML code by the client 102 at step 346 and displayed to the user. If at evaluation step 352 the error stack reveals no errors, the evaluation is then made by the EJB cluster as to whether or not the operation is a file read at step 360. If the operation is a file read, the data stream is converted to a network stream and transmitted as a file to the client 102 by the Java® application network 122 at step 362. The data is then accepted by the client 102 and served to the user at step 364.

If at evaluation step 360 the operation is not a file read (see Figure 4), then by elimination, the action is a request for file metadata such as a directory listing indication of file attributes or the like. At step 366, the metadata retrieved from the database 152 is then translated into XML format by the EJB cluster 124. The XML data is then transmitted to the JAC network 122, which encapsulates the XML from the network and sends it on to the client at step 368. The JAC network 122 then sends the encapsulated XML to the client 102 for rendering and display at step 346.

As indicated in the description above with regards to Figure 3, users utilizing the client system 102 to connect to the X:Drive system 100 do so via the public Internet and then submit requests and receive replies effecting or indicating

3NSDOCID: <WO 01333381A1 >

the user's requests. Requests for file manipulations, such as uploads, downloads, copies, moves and updates travel through each functional layer of the X:Drive system **100**.

The core of the EJB cluster, and as indicated in Figure 2, the XDFile EJB provides core effectiveness in the present X:Drive system **100**. The XDFile EJB **210** is a multi-tiered component. The X:Drive system **100** stores file metadata (such as directory structure, file name, file attributes, etc.) in the database **152** for fast retrieval, sorting, searching, linking, and other capabilities beyond standard file systems. The actual file data is stored by the X:Drive system **100** in network-attached storage units or storage area networks such as those shown in Figure 1, the NFS disk arrays **150**.

To access files that exist in this hybrid environment (bifurcated between file information and file data), X:Drive uses the XDFile object **210** to manipulate both files and file data in two-phase committal transactions. Figure 4 shows the details of these transactions.

In Figure 4, the XDFile EJB system **400** allows entry at any one of the five darkened triangles. If the action is to be a copy, entry is made at the copy entry point **402**. If the action is a file read, entry is made at the file read point **404**. If the action is a file write, entry is made at the file write point **406**. If the action is a file delete, entry is made at the delete point **408**. If the action is a file move, entry into the XDFile EJB **210** is at the move entry point **410**.

Beginning first with a file copy action beginning at the copy point **402**, the evaluation of the operation occurs at step **420**, where determination is made whether or not the action is a read transaction. If the action is a read transaction, program flow proceeds onto the read action and entry point **404**. The corresponding database action **424** is then taken. As the action is a read transaction, the corresponding database record is read and evaluation is made as to whether or not the database action, in this case read action, has been successful at step **428**. If the read action is not successful, the changes are then rolled back, if any, at step **432**. An error is then returned at step **436** and the XDFile object awaits further instructions. If the evaluation at step **428** regarding the database action was successful, action can then be taken on the actual file itself on the OS File System **204** at step **440**. In the present case, the FileOS Action **440** is a read action, and the file may be read into a temporary buffer or other memory space. The FileOS Action is evaluated for success at step **444**. If the FileOS Action step **440** was unsuccessful, a fatal error is returned at step **448**, and the changes, if any, are rolled back at step **452**. If the evaluation at step **444** was successful, evaluation is made as to whether or not the action was a copy read at step **456**. If the action was a copy read, return is made to the copy entry point **402** at step **464** in order to perform the write portion of the copy function. If the evaluation at step **456** indicates that the action was not a copy read action, evaluation is made at step **468** to determine if the action was a move/copy action. If the action was a move/copy action, control is then directed towards the move entry point **410** via step **472** in order to delete the original file as the success of the move/copy transaction at evaluation step **444** indicates the success of the file write step of the FileOS Action step **440**. Program control is then turned over to the move/action entry point **410** so that the original file may be deleted at its original location via the delete entry point **408**.

If the move/copy evaluation step **468** indicates that not only was the action not a copy read, it was also not a move/copy, then the action is committed to the system at the ultimate system resource level **104** at step **480** and an indication of success is then returned at step **484**.

Upon reaching the move entry point at **410**, evaluation is made at step **490** to determine whether or not the transaction is a copy transaction. If it is a copy transaction, the program then enters and executes the copy entry point **402**. If not, the delete entry point **408** is activated to effect the remainder of the move transaction.

Consequently, it can be seen that a variety of actions take place depending upon the state of the XDFile EJB **210** at the database action **424** and FileOS action **440** steps.

In performing file reads and writes, simple one-step actions are taken because neither of these read or write actions are either copy reads **456** or move/copy **468** and so they fall into the system commit **480** and return a successful indication at step **484**. The same is generally true for the one-step delete action. Consequently, whenever a user wants to read, write or delete a file, entry can be made into the respective entry points at **404**, **406**, and **408**. Errors are returned when necessary.

However, the copy action **402** and the move action **410** require multiple loops through the XDFile EJB **210** in order to effect their operations. For the copy function **402**, the initial read must be made successfully with the evaluation step **456** then prompting the write step to occur by the return to the copy entry point at step **464**. The read transaction step **420** is then evaluated in the negative and the write entry point/action **406** is invoked with the database action occurring at step **424** to write the new information to the transactional database **152** and, if successful, the FileOS write action for the data at step **440**. If the file write is successful, the evaluation at step **456** as to whether or not the action is a copy read is answered in the negative as is the evaluation of the transaction as to whether or not is a copy transaction executed under the move action at step **468**. The resources are then committed, temporary resources are released, and the success indication is returned at step **484**.

Consequently, for a copy transaction **402**, the loop is first made through the read function **404** and then the write function **406**. For the move action at entry point **410**, a copy transaction is first executed with the two-loop operation as set forth previously. Upon completion of the copy action, the delete action **408** is implemented in order to erase the original file and its file data. Upon the third loop through the delete step **408**, the transaction is neither a read under the copy command at step **456** nor a copy under the move command at step **468**. Consequently, the move function has successfully completed, the system resources are committed at step **480**, and a success indicator is returned at step **484**.

In Figure 5, an overview of the Java® architecture of the X:Drive system **100** of the present invention is shown. The Java® architecture **500** shown in Figure 5 may generally arise from the client **102**. A file action container **504** has certain attributes and operations as do the other beans of the architecture **500**. Contained within the file action container **504** are a number of stateful, stateless, and entity beans, as well as other containers having other beans. The file action container **504** contains two stateful beans: a user date stateful bean **506** and a process request stateful bean **508**. The user data stateful bean **506** has a user info entity bean **510** and a security stateless bean **512**.

The process request stateful bean **508** contains a single container, the XDFile container **520**. The XDFile container **520** contains three (3) beans and a container. The three beans of the XDFile container **520** are: a database IO stateful bean **522**, a file IO stateful bean **524**, and an admin stateful bean **526**. The container is a recovery container **530** which contains a recovery IO stateful bean **532**, a mount status stateful bean **534**, a recovery admin stateful bean **536**, and a recovery process stateful bean **538**.

As indicated by the nature of the beans carried by the containers, stateful beans generally carry information about the state of the bean, process, or otherwise as useful information for the ends and operations of the X:Drive system **100** of the present invention. Stateless beans generally carry no state information, and entity beans are generally for information or identification only. As Java® beans are objects intended to carry both data and processes in association with one another, it is up to the operations of the X:Drive system **100** of the present invention to selectively and appropriately activate the beans and enable the proper actions to take place. The file action container **504** is shown in alternative representation in Figure 6. In Figure 6, a client **102** issues a user authentication request **602** and an operation request **604**. The user authentication request **602** is passed into the user data stateful bean **506** in the file action container **504**. The operation request **604** is passed into the process request stateful bean **508**. The user information entity bean **510** then transmits information to a user information database **610**, as does the security stateless bean **512**. The process

FNSDOCID: <WO 0133381A1 >

request stateful bean uses a first property file **612** that is loaded upon deployment of the XDFile container **520**. The property file is loaded into the admin stateful bean **526** for use with the OS file system **204**. A Java® transaction server **620** may operate in conjunction with the database **152** as well as the OS file system **204** in order to process the operation request **604**. The second property file **630** may be loaded by the recovery admin stateful bean **536** upon the bean's deployment. The recovery IO stateful bean **532** and the recovery admin stateful bean **536** both transmit information to the recovery queue storage buffer **640**. The mount status bean **534** operates in conjunction with the mount status of the system **650**.

The recovery container **530** is called when once a failed resource begins to recover. Further description of the recovery process is given below. However, Figures 5 and 6 operate in tandem to show linearly (Figure 5) and organically (Figure 6) the structure and operation of the XDFile object **210**.

Figure 7 shows the detail of the XDFile database component. A transaction processor (such as Tuxedo from BEA) works in conjunction with the database transaction object **214** as well as the FileIO object **212** to provide a robust and reliable system. Both the database transaction **214** and the FileIO **212** objects include logic and/or programming to handle situations where database or disk array access cannot be guaranteed. The database.transaction object **214** handles the inherent doubt present in the system by using replicated or repeated clusters of databases. The replication process creates latency or delay, in the system. In order to accommodate this latency, the database transaction object **214** uses a session object (a data construct representing a user session on the X:Drive system **100**) to determine if the user's request can be transferred, or replicated, from one database cluster to another, in case of future system failure.

An important aspect with respect to the reliable operation of the X:Drive system **100** is the need to separate databases into functional groups. While the query database may be optimized for quick and small queries and while a transaction database might be optimized for fewer, larger, more time consuming updates, the database layer **236** in the X:Drive system **100** allows for associating SQL commands with different database clusters based on functionality. Additionally, the X:Drive database layer **236** is configured for consolidation and addition of databases on the fly.

As shown in Figure 7, the SQL command **710** is issued and passed to a SQL command evaluator **712**. A SQL evaluator determines the SQL type so that the SQL can be sent to the appropriate database type (that is, in the X:Drive system **100**, the transaction database **150**, the query database **152**, or both).

Upon determining the database type of the SQL statement **712**, the database preference is evaluated at step **714** to determine if the user should be sent back to the same database. If the user is not to be sent back to the same database, the database currently bearing the least load is found in step **716**, and query is then made in step **718** to ensure that the selected least-loaded database is still up, running, and available. If it is, a specification regarding the pooling of database resources is created **720** and transmitted to the database object **236**. Database object **236** then takes the SQL command and passes it to the appropriate database, either the transaction database **150** or the query database **152** via associated connecting pools **730**.

If at step **718** the least loaded database is not available, an alternative database must be used and query is made at step **736** to determine whether or not the alternate database is up. If the alternate database is not up and the evaluation step **736** fails, additional databases may be queried or, as indicated in Figure 7, a fatal error may be generated at step **738**. If the alternate database is up, a pool specification **720** is generated and passed to the database object so that the SQL command may be implemented upon the transactional **152** databases via the connection pools **730**.

If at step **714** the user must be sent back to the same database, query is made at step **740** to determine if that database is still up. If it is, the request is passed to the pool specification **720** where it is subsequently passed to the database object **236**, on to the connection pool **730**, and the appropriate database, either the transaction database **150** or

the query database **152**. If the same database is not up and the evaluation at step **740** fails, an alternative database must be used, but the SQL request is queried at step **744** to determine if the SQL command is transferable to the alternate database. If not, a fatal error occurs at step **746**. If the SQL command is transferable, query is made at step **750** to see if the alternate database is up and active. Should the evaluation fail, subsequent databases may also be queried if the SQL command is transferable. However, as shown in Figure 7, if the second database is unavailable, a fatal error may be generated at **746**. Otherwise, the database is up, and the evaluation at step at **750** is successful and the command is made available to the database object **236** via the pool specification standard **720** and on to the databases through the connection pools **730**.

In order to ensure proper operation of the XDFile database object **210**, a database status monitor **760** persistently and on-goingly queries the databases **150, 152**. The status is then returned to a database status object **762**. the database status object may provide information to the recovery container **530** of the XDFile object **210**.

The recovery mechanism for the X:Drive system **100** of the present invention is shown in Figure 8. The FileIO object **212** uses a recovery object such as the recovery container **530** to handle write transactions **406** (as opposed to read transactions **404**) when the transaction processor **214** fails. The recovery object is transparent to the user, making it easier and more convenient for the user to use the X:Drive system **100** while decreasing the concern that such a user would have in case of a power outage or other failure in one part of the X:Drive system **100**.

The FileIO object **212** reports an error to the user, but informs the user that her request was stored in the X:Drive system **100** and that the X:Drive system **100** will try to apply the change as soon as possible. If the storage unit, represented as a mounting point in the EJB cluster becomes unavailable for write transactions **406**, the monitoring client **760** updates the EJB network **124** that the status of the mounting point is "down." Once the mounting point is available and checked for data integrity, the status is updated from "down" to "recovery" and the recovery object **530** is called to apply all queued requests for the file action container **504**. This keeps the user from catastrophically losing uploads and other file writes, but may cause some delay in file reads.

In the recovery system **800** of the present invention, the multi-connected pooled database object, the recovery-enabled FileIO object **212**, and the transaction processor **146** work together to create a resource layer offering high availability, recovery, and scalability. Additionally, this resource layer (encapsulated in the XDFile EJB **210**) lends itself to replication of the data, both geographically and locally. Such replication preferably has the three essential traits of being off-site, application-driven, and accessible. With this level of controlled replication, secondary X:Drive clusters are enabled in geographically diverse locations in order to enhance the reliability of the X:Drive system **100**. Consequently, data loss from one data center or even the physical loss of an entire data center would not cause loss of customer data or access. Re-direction would occur dynamically and this information would be replicated in a plurality of sites across the X:Drive system **100**, the query or metadata databases provide multiple pointers to the user's data.

In the recovery system **800** of Figure 8, the recovery system is initially initiated when the MPS Bean **534** is set for a mode to detect mount point recovery at step **804**. At step **804**, a recover method is called and the external mount point is checked. Query is made at step **806** to evaluate whether or not recovery is already occurring. If recovery is already occurring, an exception is thrown at step **808** and exit is made at this finish point. If recovery is not already occurring, a list of mount points in recovery mode is generated in step **810**. Additionally, at step **812** a list of mount points which are down is also generated. Query is made at the evaluation step **818** as to the presence of available recovery objects in the recovery queue. If no such objects are available in the queue, the disk or other database is set into the "up" mode at step **820**. The queue for that disk is then unlocked in step **822**, and the recovery process is complete at step **824**. If at evaluation step **818** recovery objects are still in the queue, evaluation is made as to whether or not the system has gone

BNSDOCID: <WO 01333381A1 >

past the lock count at step **830**. If so, the queue for the disk in recovery is locked at step **832** for both the lock count evaluation **830** and the queue lock **832** step, control is then directed to the evaluation step as to whether or not the target file exists **834**. If the target file does not exist and the evaluation at step **834** fails, the recovery object is removed from the queue at step **840**. The status of the recovery is subsequently put in the request for alert queue at step **842** and return is then made to the query step **818** to determine whether or not objects are still available for recovery in the queue.

If the target file does exist when evaluated at step **834**, evaluation is made as to whether or not the request is more current than the file at step **850**. If the request is older than the current file, the recovery object is removed from the queue at step **840**, and the status for the request is put in the request or alert queue **842** and control returns back to the evaluation step **818** to see if any further recovery objects are available in the recovery queue.

If, in evaluating the request, it is found that the request is more current than the file, the request is submitted to the XDFile object **210** at step **852**. The submission of the request to the XDFile object **210** is not recoverable. If the submitted request is successful as indicated by the evaluation at step **854**, the recovery object is removed from the queue at step **840**, its status is put into the request for alert queue at step **842** and evaluation is made at step **818** as to the presence of any additional recovery objects in the recovery queue. However, if in submitting the request to the XDFile object **210** at step **852** the submission fails, query is made at step **860** as to whether or not the mount point has gone down. If at step **860** the mount point is still up, the request from this mount point is ignored at step **862** and the queue for the disk is unlocked at step **864**. Control of the program is then returned to the recovery object availability query in evaluation step **818**.

As shown in Figure 9, the mount point status bean **534** has UP, DOWN, and RECOVERY states. This bean is applicable to the file database **150**, as well as user disks **970, 972** as well as recovery disks **974, 976**. Additionally, the recovery admin stateful bean **536** is directed towards the recovery database **980** in order to effect the recovery process **800**.

In order to effect virus scanning and repair features, the X:Drive system **100** preferably uses the Java® JNI (Java Native Interface) to access a Norton Anti-Virus or other dynamically linked library (NAV.DLL) to scan files for viruses via a Java® servlet. The Java® servlet runs on a Windows™ version X server and can use JNI to make calls to the NAV.DLL dynamically linked libraries. In effect, the Windows™ X machine becomes a specialized NAV.DLL server located at the EJB network layer **124** of the X:Drive system **100**, on a sub-network of the resource network. The logic integrating the NAV.DLL dynamic linked libraries with all X:Drive file writes is shown schematically in the flow diagram in Figure 10.

As shown in Figure 10, the virus scanning sub-system **1000** takes the file/transaction ID **1002** and a transaction ID **1004** from a user **1006**. The file/transaction ID **1002** is passed to a file write process **1008** executed by a SUN® or other web server **1010**. The file is written to both the database generically indicated at reference **1020** and to a temporary file storage area **1022**. The file write process **1008** passes the file transaction ID to the Norton Anti-Virus (NAV) process **1024**. Within the NAV process **1024** is NAV scanner **1026**. The NAV scanner monitors the data stream or otherwise to determine and detect the presence of any viruses. If upon evaluation the NAV process **1024** detects a virus at evaluation step **1028**, data sink action is taken with respect to the database **1020**. If no virus is detected, the sequence moves to its final termination at step **1030** and data sink action is taken with respect to a temporary file on medium **1032**.

While both the file and transaction ID **1002** are delivered to the file write process **1008**, the transaction ID alone **1004** is transmitted to a fetch location info step **1040** on a SUN® or other web server **1010**. The fetch location info step **1040** transmits its results to an evaluation step **1042**, which determines whether or not the file is in the temporary storage area **1022**. If the file is in the temporary area, the file's upload status is shown in step **1044**. If the file is not in the

temporary medium **1022**, virus information is fetched at step **1050** in the file status process **1036**.

Once the virus information has been fetched, it is evaluated as to whether or not there is a virus present at step **1052**. If there is no virus detected, then the virus evaluation terminates and a display of same may be made at step **1054**.

However, if evaluation step **1052** indicates the presence of one or more viruses, a plurality of virus options may be shown and presented to the user at step **1060**. Among the virus options available are: the cleaning of the virus at step **1062**, moving the virus to a different location at step **1064**, and/or deleting the virus in step **1066**. If step **1064** is taken with the move of the virus-laden file despite its infectious nature is made, movement of the file with its final destination is made in step **1070**.

As shown in Figure 10, a number of data sink actions are taken with respect to information. Additionally, as indicated by Figure 10, the NAV process **1024** is a separate entity and may be considered to be a JAVA® servlet/daemon living on specialized Windows® NT or other servers.

In order to make resources available on an on-going basis to the virus scanning sub-system **1000** of the present invention, a chron file **1074** (a file executing commands on a periodic basis according to the time) is used to remove old files from a first temporary storage resource **1002**.

Figure 11 shows the Skip the Download/Save to My Xdrive system where a file on the Internet can be transferred over to an individual's X:Drive at generally data speeds far faster than those available to the end user. This allows the user to exercise dominion and control over the file without having to bear the burden of downloading it to the local computer at the present moment. Once the transfer has taken place across the Internet from the host to the X:Drive system **100**, then the user may download the file stored in his X:Drive directory to his local computer at his convenience.

As X:Drive exists on the Internet network, transferring a file from one network resource (such as a web or FTP server) to the user's X:Drive is made much faster from the user's standpoint by by-passing the local connection to the user and allowing the user to submit the transfer request directly to the X:Drive network for execution. The X:Drive system **100** then downloads the requested data from the target server to the user's X:Drive over the presumably higher speed connections of the public Internet.

As shown in Figure 11, the Save to My Xdrive system **1100** first has the user **1110** submit the URL at step **1112**. In order to access the X:Drive system **100** of the present invention, the user submits the URL as well as his or her user name and password at step **1114**. Upon submitting the URL and the appropriate verification information, evaluation is made of the information for authentication purposes at step **1116**. If the evaluation fails and authentication is not achieved, a login form is displayed in conjunction with the previously-indicated URL at step **1118**. If the request is authenticated, it is submitted to the STD/STMX (Skip the Download/Save to My Xdrive) queue **1132** at step **1130**. A status process is then spawned at step **1134**.

Save to My Xdrive status is then checked on an on-going basis by using the queue in the temporary storage area at step **1136**. Query is made as to whether or not the transfer is complete at step **1140**. If the transfer is complete at step **1140**, then the successful completion is indicated to the user at step **1142**. However, if the transfer is not complete, query is made as to the presence of any transfer errors at step **1146**. If an error has occurred, an error message is displayed to the user at step **1148**. However, if the transfer is incomplete but no errors have occurred, the same is then displayed to the user at step **1150**, and a short pause is taken at step **1152** for re-invoking the check STD process at step **1136**.

Once the STD queue **1132** receives the request, a daemon process processes the request from the STD queue at step **1160**. Query is made as to the business logic of the queued request at step **1162**. If the request fails the business logic check **1162**, the status is updated at step **1164**. Control may transfer back to the STD queue **1132**.

If the business logic check succeeds at step **1162**, the URL site is contacted by the X:Drive system **100** at step

1170 and the download process is activated. The data transmitted by the URL is then saved in temporary X:Drive space in step 1172, with the data being transferred then to the user data space at step 1174. The URL site 1180 may exist anywhere on the Internet so long as it is available to the X:Drive system 100. In a similar manner, a temporary storage space 1182 may also exist anywhere on the Internet so long as it is accessible and controllable by the X:Drive system 100.

Upon transferring data to the user's data space as shown in step 1174, query is made as to the success of the transfer at step 1188. For either success or failure of the successful file transfer at evaluation step 1188, the status is updated at step 1164 and is passed on to the STD queue 1132 until either success or an error is finally achieved. The status process spawned at step 1130 monitors the update status generated by step 1164 and displays the status to the user during and after the download of the file from the Internet to the user's X:Drive system.

Figure 12 shows a schematic and flowchart diagram for the client system generally used under Microsoft® Windows™ for achieving the present invention. The X:Drive system offers its clients two basic services: a file access service by which files can be uploaded and downloaded to and from X:Drive, as well as a file manipulation service from which file metadata can be obtained and manipulated. Both of these services rely upon the context of their usage. For example, the web client of the present invention uses native upload and download features as well as dialogs in the user's web browsers to facilitate the service.

With the use of the web browsers on the local machine, Windows® X clients use the Windows™ TCP/IP stacks inherently present with the Windows® version X operating system. All the file transfers effected by the X:Drive system can take place as HTTP POST/GET or, preferably, Web-DAV transfers. Generally, two basic layers are present in the file manipulation servers of the X:Drive system 100 of the present invention. An XML parser operates in conjunction with an XML data displayer. By coordinating the two basic layers of the file manipulation service, the server is able to respond with generally the same XML code to all clients. The client is then responsible for converting the XML to a relevant data structure and displaying the XML in an appropriate context. In the present invention, the JavaScript web client receives the XML code and parses it into a JavaScript data structure. A display layer in association with the client and/or browser renders the data structure as an HTML document. The Windows® X client parses the same XML code, but the display layer renders the data structure into a device listing that is understood by the Windows® version X operating system. The importance of this layered architecture is that it generally makes trivial the creation of new clients. Instead of simply creating dynamic web pages (and thus limiting service to web browsers alone), the X:Drive system 100 can enable many platforms, such as operating systems, without altering the server structure. Most platforms come with some sort of XML parsing layers, and many platforms come with display layers ready made. Consequently, the time to market may generally be considered low and efficient establishment and implementation of the X:Drive system 100 of the present invention can be achieved fairly quickly. Additionally, expansion into new platforms generally becomes much quicker as no alteration of the server structure generally needs to occur as Java® and related program functionalities are highly portable from one system to another.

In the client system 1200, as shown in Figure 12, the client 102 has a file access service 1202, including a request processing layer 1204 coupled to a network I/O layer 1206. Commands and data are then transmitted to the server side of the X:Drive system 100 where the server side request processing layer 1210 transmits the data to a query evaluating whether or not the request is one for metadata at step 1212. If the evaluation fails and the request is not one for metadata, the network I/O layer 1216 and the resource access layer 1218 are invoked in order to provide access to and operation of the transaction database 152.

If the request for metadata query at step 1212 succeeds, the request is passed on to the resource access layer 1218

INSDOCID: <WO 0133381A1 I >

and on to the XML generation layer **1220**. The response to the request from the metadatabase **150** is transmitted to the file manipulation service system **1230** of the client **120**. The XML transmitted by the XML generation layer **1220** is received by the file manipulation service **1230** as well as its XML handler **1232**. The XML is then passed on to the XML parser layer at step **1234** to arrive at a data structure **1236** that is then ready for display and so is passed on to the data display layer **1238** for display to the user who may then re-initiate the process by implementing the file access service **1202**.

Figure 13 shows the X:Drive system **100** as implemented on a Windows™ X machine, in this case, a Windows '98 machine (an Intel-based personal computer running the Microsoft Windows '98 operating system).

The second frontmost window **1310** of Figure 13 is headed by the inscription "My Computer" and shows the presence of a drive at logical letter X: **1312** with the X:Drive logo and the label www.xdrive.com (X:). This is an example of the user interface provided by the client application. The X:Drive system is transparent to the user and functions as any other drive present on the system.

If the user were to click on or activate the X:\ drive on the My Computer window **1310**, the second window **1320** appears (partially obscuring the "My Computer" window **1310**) and shows the listing under the X:\ Drive. The address of the window **1320** shows the location of the directory as being at X:\ **1322**.

Also shown in Figure 13 is the desktop icon **1330**, the start menu icon **1336**, and the system tray icon **1340**. These icons accompany the client program **102** and provide greater functionality for the user. Each icon serves to activate the client program in accordance with user-settable preferences.

Figure 13 also shows the web-based application **1350** in the background, behind the My Computer **1310** and X:\ **1320** windows. The web-based application window **1350** is shown in Figure 14. Note should be taken of the exact correspondence between the directory structures of web-based application window **1350** and the client-based application window **1320**. This correspondence provides the user with a uniform, familiar, and dependable interface upon with the user can rely.

As set forth above, the three accompanying Appendices are incorporated herein in their entirety, as is the previously filed provisional application.

While the present invention has been described with regards to particular embodiments, it is recognized that additional variations of the present invention may be devised without departing from the inventive concept.

INDUSTRIAL APPLICABILITY

It is an object of the present invention to provide a Shared Internet Storage Resource on which users may store and retrieve files to make them available to themselves, or possibly others, throughout the Internet.

It is an additional object of the present invention to provide all manner of file access and control generally available to files local to the users for such Internet-stored files.

It is an additional object of the present invention to provide an easy-to-use and readily understood user interface through which files may be stored, retrieved, and manipulated on the Internet.

It is an additional object of the present invention to gather metadata regarding such files and to store such metadata in a database.

It is yet another object of the present invention to provide a plurality of means by which Internet-stored files may be manipulated and controlled.

It is yet another object of the present invention to provide a browser-based access to Internet-stored files.

It is yet another object of the present invention to provide stand-alone application access to Internet-stored files.

RNSDOCID: <WO 01333381A1 >

It is yet another object of the present invention to provide means by which Internet files may be stored on an Internet resource by a direct Internet-to-Internet transfer subject to the control of a remote or limited-resource user.

These and other objects, advantages, and the industrial utility of the present invention will be apparent from a review of the accompanying specification and drawings.

Web Site/Server Code

###addspace.cgi 1
###client_info.cgi 9
###cookie.cgi 12
###download_client.cgi 19
###email_change.cgi 21
###error.cgi 23
###explorer.cgi 24
###explorer_user_data.cgi 28
###file_load.cgi 30
###file_save.cgi 34
#! file_upload_stat.cgi 36
###folder_create.cgi 42
###forgot_password.cgi 44
###forgot_username.cgi 47
###frame_generic.cgi 50
###get_a_shared_file.cgi 52
###get_a_shared_file_download.cgi 54
###login.cgi 57
###logout.cgi 65
###navbar.cgi 66
###password_change.cgi 68
###promo.cgi 71
###removespace.cgi 74
###selected_delete.cgi 79
###selected_rename.cgi 80
###settings_save.cgi 82
###share_a_file.cgi 85
###signup_account.cgi 91
###signup_form.cgi 105
###signup_success.cgi 111
###signup_toc.cgi 113
###skip_the_download.cgi 115
###skip_the_download_status.cgi 122
###tell_a_friend.cgi 131
###web_unauthorized.cgi 135

BNSDOCID: <WO 0133381A1 I >

###addspace.cgi

```
#!/usr/bin/perl
##############################################################################3
##  addspace.cgi - processes additional space requests using Epoch's
##  do_approval library function
##  written by Karen Eppinger
##############################################################################3

use lib ($ENV{PERL_XDRIVE_LIB});

use XDrive::Error;
use XDrive::DatabaseO;
use XDrive::DatabaseO::Table::Deal;
use XDrive::DatabaseO::Table::Item;
use XDrive::DatabaseO::Table::UserData;
use XDrive::DatabaseO::Table::DiskAccount;
use XDrive::Client::Actions;
use XDrive::Client::Quota;
use XDrive::Sale::Purchase;
use Mail::Sendmail;
use CGI::Carp qw(fatalsToBrowser);
use CGI;
use XDrive::Template;
use XDrive::CGI qw(:MAIN);
use XDrive::Client::Security;
use XDrive::CGI::Cookie;
use EpochClient_ssl;

use strict;

$ENV{'PATH'} = '/bin';
delete @ENV{qw(IFS CDPATH ENV BASH_ENV)};    # Make %ENV safer

&main();


##############################################################################
## main: main function calls all others
##
##
##############################################################################

sub main
{
      ##the hash that will be filled in and send to the Epoch function
      my %hData;

      my $oCGI = CGI->new();
      my $oErrors = new XDrive::Error;
      my $oDBH = XDrive::DatabaseO->new();

      my $oCookie = XDrive::CGI::Cookie->new('x_session_info', $oCGI);

      ####
      ## Validate the user and if an error happens during
      ## the validation process die redirect to the error cgi
      ####
      my $oToken = xd_security_check($oDBH,$oCGI,$oErrors);

      if ($oErrors->Occurud)
```


INSDOCID: <WO_____0133381A1 I >

```
        {
        xd_fatal_error($oCGI,$oErrors);
        }

    $hData{'ipaddr'} = $oCGI->remote_addr();

    if ($hData{'ipaddr'}=~/^192.168.2/)
    {
        $hData{'ipaddr'}='0.0.0.0';
    }

    my $sUserName = $oToken->data('user');
    # my $sPartnerCode = $oToken->data('partner_code');
    my $sPartnerCode = $oCookie->getElement('partner');
    my $oTemplate = new XDrive::Template
        ({
        'partner_code' => $sPartnerCode
        });

    ##used to figure whether to give user the form or process the form
    my $sAction = $oCGI->param("action");

    ## if the action is a request type, we give the user the form
    if ($sAction eq 'process')
    {
        ##get the date from the form already pre-screened by javascript
        my $returnValue = GetFormData(\%hData,$sUserName,$oCGI,$oDBH);
        if ($returnValue)
        {
            ##call the Epoch function that processes the transaction
            my $sReturnCode = do_approval(%hData);

            ##if we've been approved $return will contain a number that
is
            ##7 characters and starts with a Y followed by 7 digits
            ##only change user's quota if approved
            ##else let them know there was a problem; all problems
start with N
            ##return code could be logged in our database to track
tranactions

            ##truncate expressions longer than 32 characters
            if (length($sReturnCode)>32)
            {
            $sReturnCode = substr($sReturnCode,0,32);
            }

            if ($sReturnCode=~m/^Y/)
            {
                ##if transaction went through, give them more space
                ##and show them the ok screen
                my $error =
&WriteToPurchaseDatabase($sReturnCode,\%hData,$sUserName,$oDBH);
                if ($error)
                {
                    &TransactionOK($sReturnCode,
\%hData,$sUserName,$oTemplate,$oDBH,$oToken,$oCGI,$oErrors);
                    $oDBH->commit();
                }
                else
                {
                    ##error inserting into the database
                    &TransactionBad('141',$oTemplate,$oErrors);
```


BNSDOCID: <WO 0133381A1 >

```
                        $oDBH->rollback();
                    }
                }
                elsif ($sReturnCode=~m/^N/)
                {
                    ##tell them there was a problem
                    ##for some reason we get this returned with
                    $sReturnCode=~s/~//;
                    my $error =
&WriteToFailedDatabase($sReturnCode,\%hData,$sUserName,$oDBH);
                    &TransactionBad($sReturnCode,$oTemplate,$oErrors);
                    $oDBH->commit();
                }
                else
                {
                    ##There was a problem connecting to server
                    my $error =
&WriteToFailedDatabase('COULDNOTCONNECT\n',\%hData,$sUserName,$oDBH);

        &TransactionBad('COULDNOTCONNECT\n',$oTemplate,$oErrors);
                    $oDBH->commit();
                }
            }
            else
            {
                ##this is someone trying to use the
                ##bogus card numbers and isn't one of us
                ##don't bother writing to database because
                ##it is caught before going to Epoch
                &TransactionBad('NMYBADCARD\n',$oTemplate,$oErrors);
            }
            $oDBH->disconnect();
        }
        elsif ($sAction eq 'intro')
        {

        &ShowIntroPage($oTemplate,$sPartnerCode,$sUserName,$oToken,$oCGI,$oErro
rs);
        }
        else
        {
            &ShowForm($oTemplate,$sUserName,$oErrors);
        }
        exit;
}

##############################################################################
## GetFormData:  Fills in the hash that is required by Epoch's function
## Fill in one field at a time because not all fields on the page should go
## into hash plus a few fields don't come from form
##############################################################################

sub GetFormData(\%,$,$,$)
{
        my $hData = shift;
        my $sUserName =shift;
        my $oCGI = shift;
        my $oDBH = shift;

        my $value = 1;

        ##these are mandatory to process the tranaction
        ##javascript checks insure users fill the fields with the proper data
```


3NSDOCID: <WO 01333381A1 >

```
        $hData->{'transtype'}='approve';
        $hData->{'co_code'}='xdr';
        $hData->{'pi_code'}= $oCGI->param("pi_code");
        $hData->{'cardnum'}= $oCGI->param("cardnum");
        $hData->{'cardexp'}=$oCGI->param("cardexp");

        ##someone is trying to access from a site other than ours and use the
 free credit card
        if (($hData->{'cardnum'} eq '4121371122223333') || ($hData->{'cardnum'}
 eq '4111111111111114'))
        {
              if ($hData->{'ipaddr'} ne '0.0.0.0')
              {
                    $value=0;
              }
        }

        ##not required but used to check for fraud
        $hData->{'cardname'}= $oCGI->param("cardname");
        $hData->{'street'}=$oCGI->param("address");
        $hData->{'city'}=$oCGI->param("city");
        $hData->{'state'}=$oCGI->param("state");
        $hData->{'zip'}=$oCGI->param("zip");
        $hData->{'phone'}=$oCGI->param("phone");

        ##get email out of the database
        my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount-
>new(undef,$oDBH);
        $oDiskAccount->loadWhere('USERNAME',$sUserName);
        my $sUserSeq = $oDiskAccount->fetchColumn('USER_SEQ');
        $oDiskAccount->finish();

        my $oUserInfo = XDrive::DatabaseO::Table::UserData->new(undef,$oDBH);
        $oUserInfo->loadWhere('SEQ',$sUserSeq);
        $hData->{'email'}=$oUserInfo->fetchColumn('EMAIL_ADDRESS');
        $oUserInfo->finish();

        return $value;
}

##############################################################################
## ShowIntroPage: called to show the intro page
##
##############################################################################

sub ShowIntroPage($,$,$)
{
        my $oTemplate = shift;
        my $sPartnerCode = shift;
        my $sUserName = shift;
        my $oToken = shift;
        my $oCGI = shift;
        my $oErr = shift;

        my ($nUserSeq, $oUserData);

        my $oAction = new XDrive::Client::Actions($oToken,$oCGI);
          my $quotaAvailable = $oAction->QuotaFree();
          $quotaAvailable = sprintf("%2.2f",$quotaAvailable/1024);

          my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount-
>new(undef,undef);
          $oDiskAccount->loadWhere('USERNAME', $sUserName);
```

```
	my $nUserSeq = $oDiskAccount->fetchColumn("USER_SEQ");

	my $oSearch = XDrive::DatabaseO::Search->new($oDiskAccount-
>fetchDBO());
	my $items = $oSearch->XDGetItemsForSale($nUserSeq);

	my $itemString='';
	my $i;
	for $i(0..$#{$items})
	{
		##now using the code, get the description for the item in the
		##proper language.  This is kept in List.pm
		my $code = "EPOCH_$items->[$i][1]";
		my $description = $oErr->ReturnMessageGivenCode($code);
		$itemString .= "<LI>$description";
	}

	## Load the required template HTML files.
	$oTemplate->load('addspace_intro.thtml');
	$oTemplate->tags
	  ({
	  'products' => $itemString,
	  'quota' => $quotaAvailable
	  });
	$oTemplate->clear;

	print "Content-type: text/html\n\n";
	print $oTemplate->get();
}


##############################################################################
## ShowForm: called to show the user the blank form
##
##############################################################################

sub ShowForm($,$)
{
	my $oTemplate = shift;
	my $sUserName = shift;
	my $oErr = shift;

	my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount-
>new(undef,undef);
	  $oDiskAccount->loadWhere('USERNAME', $sUserName);
	my $nUserSeq = $oDiskAccount->fetchColumn("USER_SEQ");


	my $oSearch = XDrive::DatabaseO::Search->new($oDiskAccount-
>fetchDBO());
	my $items = $oSearch->XDGetItemsForSale($nUserSeq);
	my $oDeal = XDrive::DatabaseO::Table::Deal->new(undef, $oDiskAccount-
>fetchDBO());

	my $itemString='';
	my $i;
	for $i(0..$#{$items})
	{
		$oDeal->loadWhere("ITEM_SEQ", $items->[$i][0]);
		my $pi_code = $oDeal->fetchColumn("PRODUCT_CODE");
		my $code = "EPOCH_$items->[$i][1]";
		my $description = $oErr->ReturnMessageGivenCode($code);
```

```
            if ($i == 0)
            {
            $itemString .= '<input type="radio" name="pi_code" value="' .
$pi_code . '" CHECKED>' . $description . '<BR>';
            }
            else
            {
            $itemString .= '<input type="radio" name="pi_code" value="' .
$pi_code . '">' . $description . '<BR>';
            }
      }

      $oDeal->disconnect();

      ## Load the required template HTML files.
      $oTemplate->load('addspace_request.thtml');
      $oTemplate->tags
        ({
        'products' => $itemString
        });
      $oTemplate->clear;

      print "Content-type: text/html\n\n";
      print $oTemplate->get();
}

###############################################################################
## WriteToFailedDatabase:  if the transaction fails write it to the failed
## _transactions table
###############################################################################

sub WriteToFailedDatabase($,\%,$,$)
{
      my $sTransCode = shift;
      my $hDash = shift;
      my $sUserName = shift;
      my $oDBH = shift;

      my %transInfo;
      ##write transaction info into database
      my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount-
>new(undef,$oDBH);
      $oDiskAccount->loadWhere('USERNAME', $sUserName);

      $transInfo{'user_seq'} = $oDiskAccount->fetchColumn('USER_SEQ');
      $oDiskAccount->finish();
      $transInfo{'trans_code'} = $sTransCode;
      $transInfo{'product_code'} = $hDash->{'pi_code'};
      $transInfo{'IP'} = $hDash->{'ipaddr'};

      my $intoDB = XDrive::Sale::Purchase->new($oDBH);
      my $error = $intoDB->FailedTransaction(\%transInfo);

      return $error;
}

###############################################################################
## WriteToPurchaseDatabase:  write the user transaction info to th
user_purchase
## table
###############################################################################

sub WriteToPurchaseDatabase($,\%,$,$)
```

```
{
      my $sTransCode = shift;
      my $hDash = shift;
      my $sUserName = shift;
      my $oDBH = shift;

      my %transInfo;
      ##write transaction info into database
      my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount-
>new(undef,$oDBH);
      $oDiskAccount->loadWhere('USERNAME', $sUserName);

      $transInfo{'user_seq'} = $oDiskAccount->fetchColumn('USER_SEQ');
      $transInfo{'account_seq'} = $oDiskAccount->fetchColumn('USER_SEQ');
      $oDiskAccount->finish();
      $transInfo{'trans_code'} = $sTransCode;
      $transInfo{'product_code'} = $hDash->{'pi_code'};

      my $intoDB = XDrive::Sale::Purchase->new($oDBH);
      my $error = $intoDB->Checkout(\%transInfo);
      return $error;
}

##############################################################################
## TransactionOK:  if the tranaction was processed and ok'ed, we add the
proper space to the
## user's xdrive and let them know the space has been added
##############################################################################

sub TransactionOK($,\%,$,$)
{
      my $sTransCode = shift;
      my $hDash = shift;
      my $sUserName = shift;
      my $oTemplate = shift;
      my $oDBH = shift;
      my $oToken = shift;
      my $oCGI = shift;
      my $oErr = shift;

      my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount-
>new(undef,$oDBH);
      $oDiskAccount->loadWhere('USERNAME', $sUserName);
      my $userSeq= $oDiskAccount->fetchColumn('USER_SEQ');

      my @aCodes=split(/\|/, $sTransCode);
      $aCodes[1]=~s/~//;
      my $sNewQuota;
      my $sAddedSpace;

      my $oDeal = XDrive::DatabaseO::Table::Deal->new(undef,$oDBH);
        $oDeal->loadWhere('PRODUCT_CODE', $hDash->{'pi_code'});
        my $itemSeq = $oDeal->fetchColumn('ITEM_SEQ');
        my $oItem = XDrive::DatabaseO::Table::Item->new(undef,$oDeal-
>fetchDBO());
        $oItem->loadWhere('SEQ', $itemSeq);
        my $sCode = "EPOCH_" . $oItem->fetchColumn('CODE');
      my $sDescription = $oErr->ReturnMessageGivenCode($sCode);

        my $sSpaceToAdd = $oItem->fetchColumn('NAME');

      my $oAction = new XDrive::Client::Actions($oToken,$oCGI);
      $sNewQuota = $sSpaceToAdd + $oAction->QuotaLimit();
```

```
        ##now set the new quota
        ##in the database and in the ncftpd database
        ##used during testing to reset occasionally
        ##$sNewQuota = 25600;
        XDQuotaLimit($sUserName, $sNewQuota);

        ##insert into the spool to update ftp account

        ## Load the required template HTML files.
        $oTemplate->load('addspace_ok.thtml');
        $oTemplate->tags
          ({
          'transactionCode' => $aCodes[1],
          'addedSpace' => $sDescription
          });
        $oTemplate->clear;
        print "Content-type: text/html\n\n";
        print $oTemplate->get();
}

###############################################################################
## TransactionBad:  If we get an error code beginning with and N, it's a
declined tranaction
## get the error code and give user the bad tranaction page with error code
###############################################################################

sub TransactionBad($,$)
{
      my $sTransCode = shift;
      my $oTemplate = shift;
      my $oErrors   = shift;

      if ($sTransCode!~/^\d+$/)
      {
            ##error codes contains
            $sTransCode="EPOCH_" . $sTransCode;
            chop($sTransCode);
      }

      ##$oErrors->AddErrorByErrorCode($sTransCode);

      $oErrors->AddErrorByCodeIncludes($sTransCode);
      my $sReturnError=$oErrors->Message($sTransCode);

      if(!$sReturnError)
      {
            $sReturnError = "The was an problem processing your transaction.
Please try again.";
      }

      ## Load the required template HTML files.
      $oTemplate->load('addspace_bad.thtml');
      $oTemplate->tags
        ({
        'error' => $sReturnError
        });
      $oTemplate->clear;
      print "Content-type: text/html\n\n";
      print $oTemplate->get();
}
```


BNSDOCID: <WO 01333381A1 >

###client_info.cgi

```
#!/usr/bin/perl

use lib ($ENV{PERL_XDRIVE_LIB});
use CGI;

exit &main;

sub main ()
{
      my $oCGI = CGI->new();

      ##get this info from Michael Ryan's or Gavin's client
      my $sUsername      = $oCGI->param('username');
      my $sClientType    = $oCGI->param('client_type');
      my $sClientVersion = $oCGI->param('client_version');
      my $bFirstTime     = $oCGI->param('first_time');

      ##hash of NT info for current version of client
      ##version 1.0 is 0 in the array of upgrades
      my %infoNT;
      my @featuresNT;
      $infoNT{'current_version'} = '1.0';
      $infoNT{'force_upgrade'} = 0;
      $infoNT{'client_url'} = 'http://www.xdrive.com/download/xdrivent.exe';
      ##holds the first array subscript in which upgrade info is kept
      $infoNT{'1.0'} = 0;
      $featuresNT[0][0] = 'beta release';
      ## $featuresNT[0][1] = 'First new feature';
      ## $featuresNT[0][2] = 'Second new feature';

      ##hash of 95 info for current version of client
      ##version 2.03 is 0 in the array of upgrades
      my %info95;
      my @features95;
      $info95{'current_version'} = '2.03';
      $info95{'force_upgrade'} = 0;
      $info95{'client_url'} = 'http://www.xdrive.com/download/xdrive.exe';
      $info95{'2.00'} = 0;
      $info95{'2.01'} = 1;
      $info95{'2.02'} = 2;
      $info95{'2.03'} = 3;
      $info95{'2.04'} = 4;
      $features95[3][0] = 'automatic proxy support.';

      ## examples of other features
      ## $features95[0][1] = '2.03 feature 1';
      ## $features95[0][2] = '2.03 feature 2';
      ## $features95[1][0] = '2.04 feature 1';
      ## $features95[1][1] = '2.04 feature 2';

     my $returnString='';
     my $ref_to_hash;
     my $ref_to_array;

     ##point to hash and array for type of client
     ##this way no need to create separate functions
     if ($sClientType =~ /^xdwin9x/)
       {
           $ref_to_hash=\%info95;
```

```
            $ref_to_array=\@features95;
      }
      elsif ($sClientType =~ /^xdwinnt/)
      {
            $ref_to_hash=\%infoNT;
            $ref_to_array=\@featuresNT;
      }
      else {}

      if (($sClientType =~ /^xdwin9x/) || ($sClientType =~ /^xdwinnt/))
      {
            ##if the user's version of the client is older than the
            ##current version, ask them to upgrade and tell them
            ##about new features
            my $feature_text='';
            if ($ref_to_hash->{'current_version'} > $sClientVersion)
            {
                  ##get all features from the version 1 above the user's
                  ##to the current version
                  my $array_number_start = $ref_to_hash->{$sClientVersion} +
1;
                  my $array_number_end = $ref_to_hash->{$ref_to_hash-
>{'current_version'}};
                  ##Assemble a big string of new features for
                  ##newer versions than user has
                  my ($i,$j);
                  for $i ($array_number_start .. $array_number_end)
                  {
                        for $j (0 .. $#{$ref_to_array->[$i]})
                        {
                              $feature_text .= "  - ".$ref_to_array->[$i][$j]
. "|";
                        }
                  }
            }

            $returnString = join ("\n",
            "client_version=$ref_to_hash->{'current_version'}",
            "force_upgrade=$ref_to_hash->{'force_upgrade'}",
            "client_url=$ref_to_hash->{'client_url'}",
            "client_text=$feature_text",
            );
      }
      else
      {
            $returnString = join ("\n",
            "client_version=0.0",
            "force_upgrade=-1",
            "client_url=No url. Please contact X:drive",
            "client_text=",
            );
      }

      print $oCGI->header();
      print $returnString;

      ##if ($bFirstTime)
      ##    {
            ## Record the version number
            ## XDClientFirstTimeUse
            ##    (
            ##    $sUsername,
            ##    $sClientType,
```

```
            ##      $sClientVersion
            ##      );
        ##      }
}
```


ISDOCID: <WO_____0133381A1_I_>

###cookie.cgi

```
#!/usr/bin/perl
# Written by Martin Hald <mhald@geotribe.com> to verify that the user is
# good to login, if they are then log them in and otherwise redirect to
# a not authorized page.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});
use XDrive::DatabaseO::Table::DiskAccount;
use XDrive::DatabaseO::Table::UserSettings;
use XDrive::DatabaseO::Table::UserQuota;
use XDrive::DatabaseO::Table::Language;
use XDrive::DatabaseO::Search;

use CGI;
use XDrive::CGI::Cookie;
use CGI::Carp qw(fatalsToBrowser);

use XDrive::CGI;
use XDrive::Client::Security;
use XDrive::Error;
use XDrive::Template;
use XDrive::Library;
use XDrive::DatabaseO;
use Mail::Sendmail;

&main;
exit;

sub main
      {
      my $oCGI    = new CGI;
      my $oErr    = new XDrive::Error;
      my $oDBO    = new XDrive::DatabaseO;
      my $oCookie = new XDrive::CGI::Cookie('x_session_info', $oCGI);

      my $oToken;
      my $sToken;
      my $sUsername;
      my $sPartnerCode;

      my $bSecurity = $oCGI->param('bSecurity');
      my $sPartnerToken = $oCGI->param('partner_token');

        my $passed_lang = $oCGI->param('language');

      #####
      ## Attempt to authenticate the user by using one of the following two
      ## authentication methods: username/password pair or partner token
      ## authentication.
      #####
      if (! defined $sUsername && length($sPartnerToken) > 20)
            {
            authPartnerUser($oCGI,$oErr,$oDBO,\$sUsername,\$oToken,
                  \$sPartnerCode,$sPartnerToken);
            $sToken = $oToken->name();
            }
      else
            {
            authWebSiteUser($oCGI,$oErr,$oDBO,\$sUsername,\$oToken);
```


BNSDOCID: <WO 0133381A1 >

```
        $sPartnerCode = 'xdrv';
        }

    #####
    ## If an error occurud while trying to create a token then redirect
    ## the user to the error page.
    #####
    if ($oErr->Occurud)
        {
        $oDBO->disconnect;
        xd_fatal_error($oCGI,$oErr);
        exit;
        }

    #####
    ## If we have gotten here then we have an authenticated user.
    #####

    #####
    ## Build and print out cookies
    #####
    my $sLanguage = getLanguage($oDBO,$sUsername);


      ##check if user's language is the same as passed language
      if ((length($passed_lang) > 0) && $sLanguage ne $passed_lang)
      {
         ##update db here to new language
         setLanguage($oDBO,$sUsername,$passed_lang);
         ##update session to new language
         $sLanguage = $passed_lang;
      }


##delete the promo cookie;  this will not be set here and we
##don't want an old one hanging out
##promo cookies should be set in promo.cgi
$oCookie->deleteElement('promo') if $oCookie->getElement('promo');

    $oCookie->setElement
        ({
        'language' => $sLanguage,
        'partner' => $sPartnerCode,
        });

    print "Set-Cookie: ". $oCookie->asString();
    print "Set-Cookie: SST=$sToken; domain=.xdrive.com; path=/\n"
        if $sPartnerCode ne 'xdrv';

    #####
    ## write user login to the database
    #####
    &incrementLoginNumber($oDBO,$sUsername,$sLanguage,$sPartnerCode);


    #####
    ## Send the user off into thier file explorer
    #####
    if ($ENV{'HTTP_USER_AGENT'} =~ /^xdwin/)
        {
        print $oCGI->redirect("?sst=".$oToken->name()."&sid=0");
        }
    else
```


INSDOCID: <WO 0133381A1 >

```
            {
            xd_web_open($oCGI, "", "", \%ENV, $bSecurity);
            }

      $oDBO->disconnect;
      return 0;
      }

sub incrementLoginNumber()
      {
      my $oDBO = shift;
      my $sUsername = shift;
      my $sLanguage = shift;
      my $sPartnerCode = shift;

      my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount-
>new(undef,$oDBO);
      $oDiskAccount->loadWhere("USERNAME", $sUsername);
      $oDiskAccount->finish;
      my $timesLoggedIn = $oDiskAccount->fetchColumn("LOGIN_NUM");
      my $user_seq = $oDiskAccount->fetchColumn("USER_SEQ");

      if ($timesLoggedIn)
            {
            $timesLoggedIn++;
            }
      else
            {
            $timesLoggedIn=1;
            }

          $oDiskAccount->setColumn("LOGIN_NUM", $timesLoggedIn);
          $oDiskAccount->setColumn("LAST_LOGIN",XDToday());

          my $status = $oDiskAccount->update();

          if ($status > -1)
            {
                  $oDiskAccount->commit();
                  $oDiskAccount->finish();

                  ##give user extra 10MB if 10th login
                  if ($timesLoggedIn == 10)
                  {
                        my $oUserQuota = XDrive::DatabaseO::Table::UserQuota-
>new(undef,$oDBO);
                        $oUserQuota->loadWhere("USER_SEQ", $user_seq);
                        my $additional_quota = $oUserQuota-
>incrementQuota($user_seq,10240);
                        if ($additional_quota > 0)
                        {
                              &send_email($user_seq, $oDBO,
$additional_quota,$sLanguage, $sPartnerCode);
                        }
                  }
            }
         else
            {
            # $oDiskAccount->rollback();
            }

}
```

```
sub send_email
{
      my $user_seq = shift;
        my $oDBO = shift;
      my $additional_quota = shift;
      my $sLanguage = shift;
      my $sPartnerCode = shift;

      ##comes in as k, change to megabytes
      my $mbs = $additional_quota/1024;

        my $oUserData = XDrive::DatabaseO::Table::UserData->new(undef,$oDBO);
        $oUserData->loadWhere("SEQ", $user_seq);
        my $email_address = $oUserData->fetchColumn("EMAIL_ADDRESS");
        my $name_first = $oUserData->fetchColumn("NAME_FIRST");
        my $name_last = $oUserData->fetchColumn("NAME_LAST");

        my $oTemplate =  new XDrive::Template
      ({
        'language'     => $sLanguage,
        'partner_code' => $sPartnerCode,
        });

        $oTemplate->load('received_10MB_10logins.thtml');
      $oTemplate->tags({
            'mbs' => $mbs,
            });
        $oTemplate->clear();
        my $message = $oTemplate->get;

        my %toXdrive =
            (
            To      => "$name_first $name_last <$email_address>",
            Bcc     => '',
            From    => "support\@xdrive.com",
            Message => $message,
            Subject => "Congratulations!"
             );

        sendmail(%toXdrive);
}

sub authPartnerUser
{
      my $oCGI = shift;
      my $oErr = shift;
      my $oDBO = shift;
      my $rsUsername = shift;
      my $roToken = shift;
      my $rsPartnerCode = shift;
      my $sPartnerToken = shift;

      my $oCookie = new XDrive::CGI::Cookie('x_session_info', $oCGI);

      my $oPartnerToken = new Token
            ({
            'err' => $oErr,
            'dbh' => $oDBO,
            });
      $oPartnerToken->load($sPartnerToken);

      return if $oErr->Occurud;
```


\SDOCID: <WO_____0133381A1_I_>

```
        $$roToken = new Token
                ({
                'dbh' => $oDBO,
                'err' => $oErr,
                'user_sequence' => $oPartnerToken->data('user_seq'),
                });
        $$roToken->create();

        return if $oErr->Occurud;

        ### Edited by Justin so that the partner_code is looked for
        ### in the cookie instead of the token table.
        $$rsPartnerCode = $oPartnerToken->data('partner_code');
        ##$$rsPartnerCode = $oCookie->getElement('partner');
        $$rsUsername = $oPartnerToken->data('user');

        $$roToken->data('ip',$ENV{REMOTE_ADDR});
        $$roToken->data('browser',$ENV{HTTP_USER_AGENT});
        $$roToken->data('user',$$rsUsername);
        $$roToken->data('user_seq',$oPartnerToken->data('user_seq'));
        $$roToken->data('partner_code',$$rsPartnerCode);
        $$roToken->data('disk_account_seq',$oPartnerToken-
>data('disk_account_seq'));
        $$roToken->save;

        $oPartnerToken->delete();
}

sub authWebSiteUser
        {
        my $oCGI = shift;
        my $oErr = shift;
        my $oDBO = shift;
        my $rsUsername = shift;
        my $roToken = shift;

        my $sPassword = $oCGI->param('pass');
        $$rsUsername = $oCGI->param('user');

        $oCGI->param('user');

        if (xd_auth_password($$rsUsername,$sPassword,$oDBO))
                {
                ## Login the user info X:drive and get the session token
                $$roToken = xd_login($oCGI, $$rsUsername, $oErr, $oDBO);
                }
        else
                {
                $oErr->AddErrorByErrorCode('501');
                }
        }

sub getLanguage
        {
        my $oDBO = shift;
        my $sUsername = shift;

        my $language;

        ## get the user's language out of the database
        my $oDiskAccount =  XDrive::DatabaseO::Table::DiskAccount-
>new(undef,$oDBO);
        $oDiskAccount->loadWhere("USERNAME", $sUsername);
```

```
        $oDiskAccount->finish;
        my $userSeq = $oDiskAccount->fetchColumn("USER_SEQ");

        my $oUserSettings = XDrive::DatabaseO::Table::UserSettings-
>new(undef,$oDBO);
        $oUserSettings->loadWhere("USER_SEQ",$userSeq);
        $oUserSettings->finish;
        my $language = $oUserSettings->fetchColumn("LANGUAGE");

        if ($language eq '')
              {
              $language = 'english';
              }
        else
              {
              ## Get language from database given code
              my $oLanguage = XDrive::DatabaseO::Table::Language-
>new(undef,$oDBO);
              $oLanguage->loadWhere("SEQ",$language);
              $oLanguage->finish;
              $language = $oLanguage->fetchColumn("CODE");
              }

        return $language;
        }


sub setLanguage
{
         ##set the LANGUAGE column of the User_Settings table to passed
language


       my $oDBO = shift;
       my $sUsername = shift;
       my $language = shift;

         my ($rv,$errorCode);

       ## get the user's language out of the database
       my $oDiskAccount =  XDrive::DatabaseO::Table::DiskAccount-
>new(undef,$oDBO);
         ##grab right table
       $oDiskAccount->loadWhere("USERNAME", $sUsername);
       $oDiskAccount->finish;
       my $userSeq = $oDiskAccount->fetchColumn("USER_SEQ");

      my $oUserSettings = XDrive::DatabaseO::Table::UserSettings-
>new(undef,$oDBO);
       $oUserSettings->loadWhere("USER_SEQ",$userSeq);
       $oUserSettings->finish;

         ##grab the seq number of the LANGUAGE being passed
         my $oLanguage = XDrive::DatabaseO::Table::Language->new(undef,$oDBO);
         $oLanguage->loadWhere("CODE",$language);
         $oLanguage->finish();
         my $seq_lang = $oLanguage->fetchColumn("SEQ");

         eval
         {
            ##
            ##set language here
            $rv = 0;
```


INSDOCID: <WO 0133331A1 I >

```
            $oUserSettings->setColumn('LANGUAGE',$seq_lang);
            $rv = $oUserSettings->update();
        };
        if ($rv == 0)
        {
            $oUserSettings->rollback();
            $errorCode = 0;
        }
        else
        {
            $oUserSettings->commit();
            $errorCode = 1;
        }
        return $errorCode;
}
```

###download_client.cgi

```
#!/usr/bin/perl
## Written by Karen Eppinger
## Script that shows the 'download the client' page
## it can no longer be static html because we need to
## do some checking on whether the user is from a partner or not
## if so, make sure to let them know what their X:drive login name
## is if it differs from their partner login

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use XDrive::Library;
use XDrive::Template;
use XDrive::Error;
use XDrive::DatabaseO;
use XDrive::Client::Security;
use XDrive::DatabaseO::Table::ResellerUserMap;
use XDrive::DatabaseO::Table::Reseller;

&main;
exit;

sub main
      {
      ## Load the session token
      my $oErr    = new XDrive::Error;
      my $oDBO    = new XDrive::DatabaseO;
      my $oCGI    = new CGI;

      my $oToken = xd_security_check($oDBO,$oCGI,$oErr);
      my $oCookie = new XDrive::CGI::Cookie('x_session_info', $oCGI);

      if ($oErr->Occurud)
            {
            xd_fatal_error($oCGI,$oErr);
            $oDBO->disconnect();
            exit;
            }

      my $partner_code = $oToken->data('partner_code');
      my $language     = $oCookie->getElement('language') || 'english';

      my $oForm = new XDrive::Template
            ({
            'partner_code' => $partner_code,
            'language' => $language,
            });

      $oForm->load('download_client.thtml');

      ##if we are coming from a partner, make sure partner login
      ##and X:drive login match

      my $reseller_username;
      my $reseller_name;
      my $partner_warning;
      my $username;
```


INSDOCID: <WO 01333381A1 | >

```
    if ($partner_code ne 'xdrv')
    {
          my $user_seq = $oToken->data('user_seq');
          $username = $oToken->data('user');

          my $oResellerUserMap = XDrive::DatabaseO::Table::ResellerUserMap-
>new(undef, $oDBO);
          my $oReseller = XDrive::DatabaseO::Table::Reseller->new(undef,
$oDBO);
          $oReseller->loadWhere("CODE", $partner_code);
          $reseller_name = $oReseller->fetchColumn("NAME");
          $oResellerUserMap->loadWhere("USER_SEQ", $user_seq);
          $reseller_username = $oResellerUserMap->fetchColumn("ALIAS");

          if ($reseller_username ne $username)
          {
                ##load the text for the warning message
                my $oWarning = new XDrive::Template
                      ({
                      'partner_code' => $partner_code,
                      'language' => $language,
                      });

                $oWarning->load('download_client_warning.thtml');
                $oWarning->tags
                      ({
                      'reseller_name' => $reseller_name,
                      'reseller_username' => $reseller_username,
                      'username' => $username,
                      });

                $oWarning->clear();
                $partner_warning = $oWarning->get();
          }
    }


    $oForm->tags
          ({
          'partner_warning' => $partner_warning,
          'reseller_name' => $reseller_name,
          'reseller_username' => $reseller_username,
          'username' => $username,
          });

    $oForm->clear();

    print $oCGI->header(), $oForm->get;

    $oDBO->disconnect();

    return 0;
    }
```

###email_change.cgi

```
#!/usr/bin/perl

use lib ($ENV{PERL_XDRIVE_LIB});

use XDrive::Client::Security;
use XDrive::DatabaseO;
use XDrive::DatabaseO::Table::UserData;
use XDrive::DatabaseO::Table::DiskAccount;

use CGI::Carp qw(fatalsToBrowser);
use CGI;
use XDrive::Library;
use XDrive::Template;
use XDrive::Security;
use XDrive::CGI;
use XDrive::Error;

use strict;

&main;
exit;

sub main
{
      my $oCGI = CGI->new();
      my $oErr = new XDrive::Error;
      my $oDBO = new XDrive::DatabaseO;

      ####
      ## Check the token is valid and is an error occured then
      ## redirect with a fatal error
      ####

        my $oToken = xd_security_check($oDBO, $oCGI, $oErr);

      if ($oErr->Occurud)
            {
            xd_fatal_error($oCGI,$oErr);
            exit;
            }

      my $sUserName = $oToken->data('user');
      my $sOldEmail = $oCGI->param('oldEmail');
      my $sNewEmail = $oCGI->param('newEmail');

      if (($sOldEmail eq '') || ($sNewEmail eq ''))
      {
            my $sMessage = $oErr->ReturnMessageGivenCode(1350);
            XDErrorToBrowser("",$sMessage,undef,$oToken);
      }

      ##first, get user_seq from the disk_account table
      ##since we only have the user name, need to do this first
      my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount-
>new(undef,undef);
      $oDiskAccount->loadWhere('USERNAME', $sUserName);
      my $nUserID = $oDiskAccount->fetchColumn('USER_SEQ');

      ##now that we have that, get the email address from
```


VSDOCID: <WO_____0133381A1 I >

```
        ##user table using the user_seq number to pull the seq number
        my $oUserInfo = XDrive::DatabaseO::Table::UserData->new(undef,
$oDiskAccount->fetchDBO());
        $oUserInfo->loadWhere('EMAIL_ADDRESS', $sNewEmail);

        ##if a sequence number is returned, there is already a record
        ##in the database with that email address. don't allow to change

        my $nSeqNumber = $oUserInfo->fetchColumn('SEQ');

        if ($nSeqNumber)
        {
              $oUserInfo->disconnect();
              my $sMessage = $oErr->ReturnMessageGivenCode(1351);
              XDErrorToBrowser("",$sMessage,undef,$oToken);
        }
        else
        {
              $oUserInfo->loadWhere('SEQ', $nUserID);
              my $sEmailinDB = $oUserInfo->fetchColumn('EMAIL_ADDRESS');

              if ($sOldEmail eq $sEmailinDB)
              {
                    ##set email in class
                    $oUserInfo->setColumn('EMAIL_ADDRESS', $sNewEmail);
                    ##now update database
                    $oUserInfo->update();

                    my $oTemplate = new XDrive::Template
                                ({'partner_code' => $oToken-
>data('partner_code')});
                    $oTemplate->load('pr_changeemail_ok.thtml');
                    print "Content-type: text/html\n\n";
                    print $oTemplate->get();
              }
              else
              {
                    $oUserInfo->disconnect();
                    my $sMessage = $oErr->ReturnMessageGivenCode(1352);
                    XDErrorToBrowser("",$sMessage,undef,$oToken);
              }
        }
        $oUserInfo->commit();
        $oUserInfo->finish();
        $oUserInfo->disconnect();
}
```

###error.cgi

```
#!/usr/bin/perl

use lib ($ENV{PERL_XDRIVE_LIB});
use XDrive::Error;
use XDrive::Template;
use CGI;

&main;
exit;

sub main
{
      my $oCGI = new CGI;
      my ($sErrorCode) = $ENV{QUERY_STRING} =~ /error=([^\&\=]+)/;
      my $oError = new XDrive::Error;
      my $sError = $oError->ReturnMessageGivenCode($sErrorCode);
      my $oTemplate = new XDrive::Template( {'partner_code' => 'xdrv'} );
      $oTemplate->load('generic_error.thtml');
      $oTemplate->tags
                ({
                'message' => $sError
                });
      $oTemplate->clear();
      print $oCGI->header(), $oTemplate->get;
}
```

###explorer.cgi

```
#!/usr/bin/perl
## Written by Martin Hald <mhald@uci.edu> on Tue May 25 15:23:31 PDT 1999.
## Program to build the file explorer which is itself a popup window.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});
#use vars qw(@ISA);

#@ISA = qw(XDrive::CGI);

use CGI qw(param header);
use CGI::Carp qw(fatalsToBrowser);
use Date::Format;
use HTTP::Icons;
# use XDrive::CGI qw(:MAIN);
use XDrive::Client::Security;
use XDrive::Client::Quota;
use XDrive::Library;
use XDrive::Template;
use XDrive::DatabaseO;
use XDrive::DatabaseO::Table::UserSettings;
use XDrive::DatabaseO::Table::DiskAccount;
use XDrive::DatabaseO::Table::UserData;
use XDrive::Error;

&main;

exit(0);

sub main
      {
      ####
      ## Global variables
      ####
      my $oToken;          ## XDrive Token
      my $sUsername;       ## username
      my $sPath;           ## path for index
      my $sSST;            ## Token name
      my $bEditExt;        ## Allow extensions to be edited?
      my $bFirstTime;      ## First time the've logged in...
      my $bExtraHelp;      ## Print extra help
      my $bMarketing;      ## does user want to receive offers from other
companies
      my $bNewsletter;     ## does user want to receive our newsletter
      my $sPartner;        ## partners name
      my $g_sFrameSize;    ## breakdown of the centerview frame
      my $g_sFrameBanner;  ## banner view frame information

      my $oDBO     = XDrive::DatabaseO->new(undef,undef);
      my $oCGI     = new CGI;
      my $oErr     = new XDrive::Error;
      my $oCookie = new XDrive::CGI::Cookie('x_session_info', $oCGI);


      ####
      ## If the user has bookmarked the X:drive service then redirect
      ## them back to the homepage
      ####
```

```
    if (! length($oCGI->param('sst')) && ! length($oCGI->cookie('SST')))
          {
          print $oCGI->redirect('/cgi-bin/web_unauthorized.cgi?error=804');
          $oDBO->disconnect();
          return 0;
          }

    ####
    ## Check the security and if an error occurs
    ####
     $oToken = xd_security_check($oDBO,$oCGI,$oErr);


    if ($oErr->Occurud) {
          $oDBO->disconnect();
          xd_fatal_error($oCGI, $oErr);
          exit;
    }

    ####
    ## Now we know we have a valid session so pull the partner name
    ## from a cookie if available or clear the variable
    ####
    # $sPartner = $oToken->data('partner_code');
    $sPartner = $oCookie->getElement('partner');
    $sPartner = "xdrv" if ($sPartner eq "");

    ## Load the required template HTML files.
    # my $oFrame = new XDrive::Template
    #      ({
    #      'partner_code' => $oToken->data('partner_code')
    #      });

    ### Edited by Justin to check the cookie instead of
    ### the token table for the partner_code.
    my $oFrame = new XDrive::Template
          ({
          'partner_code' => $oCookie->getElement('partner')
          });

    ## If the request comes from the windows app the give back a simplified
template
    $oFrame->load("acct_explorer_frame.thtml");

    ## Assign globally used variables
    $sPath = $oCGI->param('sFolderCurrent');
    $sSST = $oToken->name;
    $sUsername = $oToken->data('user');



    ## User settings
    my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount->new(undef,
$oDBO);


    my $oUserSettings = XDrive::DatabaseO::Table::UserSettings->new(undef,
$oDBO);
    my $oUserData = XDrive::DatabaseO::Table::UserData->new(undef, $oDBO);

    $oDiskAccount->loadWhere("USERNAME", $sUsername);
    $oUserSettings->loadWhere("USER_SEQ", $oDiskAccount-
>fetchColumn("USER_SEQ"));
```

```
        $oUserData->loadWhere("SEQ", $oDiskAccount->fetchColumn("USER_SEQ"));

        $bEditExt    = $oUserSettings->fetchColumn("FILE_EXT_EDITABLE") == 1 ?
 'true' : 'false';
        $bExtraHelp  = ($oUserSettings->fetchColumn("EXTRA_HELP") == 1) ?
 'true' : 'false';
        $bMarketing  = $oUserSettings->fetchColumn("OPT_MARKETING") == 1 ?
 'true' : 'false';
        $bNewsletter = $oUserSettings->fetchColumn("OPT_NEWSLETTER") == 1 ?
 'true' : 'false';

        my $firstName = $oUserData->fetchColumn("NAME_FIRST");
        my $lastName  = $oUserData->fetchColumn("NAME_LAST");

        my $first = $oCGI->param('first');
        $bFirstTime  = $first eq 'yes' ? 'true' : 'false';

        ## Frame settings
        if ($sPartner eq 'cc' || $sPartner eq 'qupa')
              {
              $g_sFrameSize   = '100%';
              $g_sFrameBanner = '';
              }
        else
              {
              $g_sFrameSize   = '103,*';
              $g_sFrameBanner = '<FRAME NAME="banner"'.
                    ' SRC="/cgi-bin/ads.cgi" SCROLLING=NO BORDER=0  '.
                    ' FRAMEBORDER=0 MARGINWIDTH=0 MARGINHEIGHT=0    '.
                    ' TOPMARGIN=0 LEFTMARGIN=0>';
              }

        ##get the language information from the cookie
        ##if no cookie or not set, set to english
        my %session_info = $oCGI->cookie('x_session_info');
        my $language;

        if ($session_info{'language'} ne '') {
              $language = $session_info{'language'};
        }
        else {
              $language = 'english';
        }

        my $clientDownload = $oCGI->param('client');
        my $sCenterPage = 'centerview.thtml';
        if ($clientDownload eq 'getclient') {
              $sCenterPage = 'download_client.thtml';
        }

        ## Set the token name and session ID in the navigation form so that
popup
        ## windows have access to them and the do not need to be passed around.
        $oFrame->tags
              ({
              'sSST' => $sSST,
              'bSettingEditExtensions' => $bEditExt,
              'sPartner' => $sPartner,
              'bExtraHelp' => $bExtraHelp,
              'bFirstTime' => $bFirstTime,
              'bMarketing' => $bMarketing,
              'bNewsletter' => $bNewsletter,
              'centerPage' => $sCenterPage,
```

```
            'userName' => $sUsername,
            'firstName' => $firstName,
            'lastName' => $lastName,
            'frameBanner' => $g_sFrameBanner,
            'frameSize' => $g_sFrameSize,
            'language' => $language
            });

    ## Print out the HTML and exit
    $oFrame->clear();
    print $oCGI->header(), $oFrame->get;

    $oDiskAccount->finish();
    $oUserSettings->finish();
    $oUserData->finish();

    $oDBO->disconnect();
}
```

###explorer_user_data.cgi

```
#!/usr/bin/perl
## Written by Martin Hald <mhald@uci.edu> on Tue May 25 15:23:31 PDT 1999.
## Program to build the file explorer which is itself a popup window.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use vars qw(@ISA);

@ISA = qw(XDrive::CGI);

use Data::Dumper;
use CGI;
use CGI::Carp qw(fatalsToBrowser);
use Token;
use XDrive::CGI qw(:MAIN);
use XDrive::Client::Actions;
use XDrive::Client::Security;
use XDrive::DatabaseO;
use XDrive::Library;
use XDrive::Template;
use XDrive::Error;

&main;
exit;

sub main
      {
      my $oCGI = new CGI;
      my $oErr = new XDrive::Error;
      my $oDBO = new XDrive::DatabaseO;

      my $oToken = xd_security_check($oDBO,$oCGI,$oErr);

      if ($oErr->Occurud)
            {
            xd_fatal_error($oCGI,$oErr);
            exit;
            }

      my $sFolder;
      my $oAction = new XDrive::Client::Actions($oToken,$oCGI);

      $sFolder = $oCGI->param('folder_current');

      ## Load the required template HTML files.
      my $oFrame = new XDrive::Template
            ({
            'partner_code' => $oToken->data('partner_code')
            });

        if ($ENV{'HTTP_USER_AGENT'} =~ /^xdwin/)
              {
              $oFrame->load("acct_user_data_xd_win.thtml");
              }
      else
            {
            $oFrame->load("acct_user_data.thtml");
            }
```


BNSDOCID: <WO 0133381A1 | >

```
      ## Set the token name and sesion ID in the navigation form so that
popup
      ## windows have access to them and the do not need to be passed around.
      $oFrame->tags
            ({
            'sst' => $oAction->SST(),
            'sid' => $oAction->SID(),
            'usage_total' => $oAction->QuotaLimit(),
            'usage_used' => $oAction->QuotaUsed(),
            'stuff' => $oAction->DiskAccountXML($sFolder)
            });
      $oFrame->clear;

      $oAction->DisconnectDB();

      ## Print out the HTML and exit
      print "Cache-Control: no-cache\n";
      print "pragma: no-cache\n";
      print "Content-type: text/html\n\n";
      print $oFrame->get;
      }
```


SDOCID: <WO_____0133381A1_I_>

###file_load.cgi

```
#!/usr/bin/perl
# Program written by Martin Hald <mhald@uci.edu> to fetch files from a
# storage area or database and return them via a HTTP socket to the user.

use strict;
use CGI qw(header param);
use CGI::Carp 'fatalsToBrowser';

## The HTTP::MimeTypes module was a quick module that I wrote that reads the
## standard apache mime.types file, parses it and given any known extension
## translates it to the correct mimetype.

use lib ($ENV{PERL_XDRIVE_LIB});

use HTTP::MimeTypes;
use XDrive::Client::Actions;
use XDrive::Client::Security;
use XDrive::DatabaseO::Table::DiskItemShare;
use XDrive::DatabaseO;
use XDrive::Library;
use XDrive::Error;

## We have two security methods when downloading files:
##   1) tokens
##   2) claim checks
## to deal with this we simply security method we are using and process the
## request.

&main;
exit;

sub main
      {
      my $oCGI = new CGI;
      my $oErr = new XDrive::Error;
      my $oDBO = new XDrive::DatabaseO;

      my $sFileCurrent; ## Current File
      my $oAction;      ## Action object

      ####
      ## Process the request as a share a file pickup if the claim_check
      ## param is available
      ####
      if (param('claim_check'))
            {
            my $oShare;
            $oShare = XDrive::DatabaseO::Table::DiskItemShare->new();
            $oShare->loadWhere("random_key", param('claim_check'));

            $oAction = new XDrive::Client::Actions($oShare,$oCGI);
            $sFileCurrent = join
                  (
                  '/',
                  $oShare->fetchColumn("ITEM_PATH"),
                  $oShare->fetchColumn("ITEM_NAME")
                  );
            }
      ####
```


BNSDOCID: <WO 0133381A1 >

```
        ## Otherwise it is an request from the browser or PC client
        ## side program so let the actions object handle the request
        ####
        else
              {
              ####
              ## Attempt to authenticate the user and if that fails
              ## then redirect to the error CGI
              ####
              my $oToken = xd_security_check($oDBO, $oCGI, $oErr);


              if ($oErr->Occurud)
                    {
                    xd_fatal_error($oCGI,$oErr);
                    exit;
                    }

              ####
              ## Now we know that we have a valid token so go ahead
              ## and let the actions object handle the request
              ####

              $oAction = new XDrive::Client::Actions
                    (
                    $oToken,
                    $oCGI
                    );

              $sFileCurrent = $oAction->FileCurrent();
              }

        ## Check that the current file is OK.  If this check fails then
        ## the code does an XDErrorToBrowser and exists
        $oAction->FileCheck($sFileCurrent);

        print _header($sFileCurrent);

        ## Commented out by Justin because it was
        ## including a 1 at the end of the file by printing it out.
        #print $oAction->FileLoad($sFileCurrent);
          $oAction->FileLoad($sFileCurrent);

        $oDBO->disconnect;
        }

sub _header
        {
        my $sFile = shift;
        my $mlt = new HTTP::MimeTypes;

        ## Grab the extension and lookup the correct mimetype using the mlt or
mime
        ## lookup table object.

        my $sHeader;      ## MIME header
        my $sExtension;   ## file extension

        ## Clean up the filename by getting rid of any path that comes before
        ## the filename.
        $sFile =~ s=.*/==g;

        if (param('mime') eq 'download')
```

```
            {
            if ($ENV{HTTP_USER_AGENT} =~ /MSIE/)
                  {
                  $sHeader .= "Content-Disposition: attachment;
 filename=$sFile\n";
                  $sHeader .= "Content-type: application/download;
 name=\"$sFile\"\n\n";
                  }
            else
                  {
                  $sHeader .= "Content-type: application/octet-stream\n\n";
                  }
            }
      else
            {
            my $dotPos=-1;
            my $returnPos=-1;
            while (($dotPos = index($sFile,".", $dotPos)) > -1)
            {
                  $returnPos = $dotPos;
                  $dotPos++;
            }

            ##if no extension set extension to nothing
            if ($returnPos < 0)
            {
                  $sExtension='';
            }
            else
            {
                  $sExtension = substr($sFile,$returnPos+1);
            }

            $mlt->extension($sExtension);
            $sHeader = $mlt->header();
            }

      return $sHeader;
}

sub IEHack ()
      {
      my $sFileCurrent = param('sFileCurrent');
      my ($sFileOnly) = $sFileCurrent =~ /\/([^\/]+)$/;
      my $sJavascript;

      if (param('source') eq 'www.fileExplorer.view' || param('source') eq
'www.fileExplorer.download')
            {
            $sJavascript = <<EOM;
<SCRIPT LANGUAGE=JAVASCRIPT>
if (parent.parent.parent.name)
      {
      parent.parent.parent.parent.XDReset();
      parent.parent.parent.parent.XDRefreshExplorer();
      }
</SCRIPT>
EOM
            }

     print <<EOM;
Content-type: text/html
```


BNSDOCID: <WO 0133381A1 >

```
<HTML>
<BODY>

$sJavascript

<OBJECT classid=CLSID:4CCF6192-4552-11D3-80A8-0050048D4BF8
        codebase="http://209.101.43.96/dll/xdfiles.cab"
        id=XDFiles>
</OBJECT>

<SCRIPT LANGUAGE="VBSCRIPT">


' Don't raise errors
On Error Resume Next

Dim oXDFiles             ' The ActiveX control

' Late bind to the control
Set oXDFiles = CreateObject("XDFiles.XDFiles.1")

' If we got an error, they didn't install the ActiveX control
If Err.Number <> 0 Then
      MsgBox "You must install the X:drive ActiveX control in order to
download " & _
            "the file.  Please click Download again and when prompted to
install the " & _
            "ActiveX control, click Yes."
End If

' Set some test values for the properties
oXDFiles.Prompt = True
oXDFiles.Destination = "c:\\$sFileOnly"
oXDFiles.File = "$sFileCurrent"

' Call each method
oXDFiles.Get

' Print out each property
' document.write("oXDFiles.Destination = " & oXDFiles.Destination & "<br>")
' document.write("oXDFiles.Prompt = " & CBool(oXDFiles.Prompt) & "<br>")
' document.write("oXDFiles.File = " & oXDFiles.File & "<br>")
' document.write("oXDFiles.ServerSideToken = " & oXDFiles.ServerSideToken &
"<br>")
' document.write("oXDFiles.SessionId = " & oXDFiles.SessionId & "<br>")

' Free the ActiveX control
Set oXDFiles = Nothing

</SCRIPT>

</BODY>
</HTML>
EOM
      }
```

###file_save.cgi

```
#!/usr/bin/perl

######
### file_save.cgi
######

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});
use CGI::Carp qw(fatalsToBrowser);
use Token;

use XDrive::CGI2;                ## file upload functions
use XDrive::CGI qw(:MAIN);       ## xd_web_buttonindex function
use XDrive::Client::Actions;
use XDrive::Client::Security;
use XDrive::Error;
use XDrive::Library;             ## xd_fatal_error function
use XDrive::DatabaseO;
use XDrive::DatabaseO::Search;
use XDrive::Template;
use XDrive::DatabaseO::Transaction;

&main;

exit;

sub main {
      my $oErr    = new XDrive::Error;
      my $oDBO    = new XDrive::DatabaseO;
      my $oSearch = new XDrive::DatabaseO::Search;

      my $oTransaction = XDrive::DatabaseO::Transaction->new($oDBO);

      ####
      ## Parse the SST cookie manually and retrieve the user sequence
      ## by passing it to the getUserSeq sub.
      ####
      my ($cookie) = $ENV{'HTTP_COOKIE'} =~ /\bSST=(\w+)\b/;
      my $user_seq = &getUserSeq($oSearch, $cookie);

      my $bytes = $ENV{'CONTENT_LENGTH'}; ## number of bytes being uploaded.

      my %upload_hash = ('USER_SEQ' => $user_seq,
                         'BYTES'    => $bytes);
      my $oCGI = new XDrive::CGI2(\%upload_hash, $oTransaction);

      ####
      ## Attempt to authenticate the user and if the authentication
      ## fails then redirect to the error CGI
      ####
      my $oToken = xd_security_check($oDBO, $oCGI, $oErr);

      if ($oErr->Occurud){
            xd_fatal_error($oCGI, $oErr);

            exit;
      }
```


RNSDOCID: <WO 0133381A1 | >

```
        ##########################################################################
####
        ######
        ### Check to see if they've exceeded
        ### their quota limit, and error if so.
        ######
        # my $oUserQuota = XDrive::DatabaseO::Table::UserQuota->new(undef,
$oDBO);
          # $oUserQuota->loadWhere("USER_SEQ", $user_seq);
          # my $nQuota = $oUserQuota->fetchColumn("QUOTA");
          # my $nDiskUsed = $oUserQuota->fetchColumn("DISK_USED");
        # if ( ($nQuota * 1024) < ($nDiskUsed + $bytes) ) {
        #     $oUserQuota->finish();
        #     $oDBO->disconnect();
        #     ## let user know he or she has exceeded his quota
        #     $oErr->AddErrorByErrorCode(1240);
        #     XDErrorToBrowser('action_upload__error.thtml', $oErr, 1,
$oToken);
        #     exit(0);
        # }
        ##########################################################################
####

        ####
        ## Authentication succeeded so we have a valid session, let
        ## the actions object handle the request
        ####
        my $oAction = new XDrive::Client::Actions($oToken, $oCGI);

        $oAction->SaveUploadedFiles();

        ####
        ## File has been uploaded at this point, so set
        ## the upload inactive in the database.
        ####
        $oTransaction->setUploadInactive();

        xd_web_buttonindex($oCGI);
        $oAction->DisconnectDB();

        $oSearch->disconnect();

        return 0;
}

######
### Subroutine:  getUserSeq
### Parameters:  one object, one scalar
### Returns:     one scalar
### Description: Receives a database search object and an SST token.
###              Queries the token table for the user sequence and returns
it.
######
sub getUserSeq ($$) {
   my $oSearch  = shift;
   my $sst_code = shift;

   my $st = "SELECT user_seq FROM token WHERE code = '$sst_code'";

   my $data = $oSearch->XDSQLSearch($st);

   return $$data[0][0];
}
```


3NSDOCID: <WO 0133381A1 I >

#! file_upload_stat.cgi

```
#!/usr/bin/perl

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use XDrive::CGI;
use CGI::Carp qw(fatalsToBrowser);
use XDrive::DatabaseO;
use XDrive::DatabaseO::Search;
use XDrive::Error;
use XDrive::Client::Security;
use XDrive::Template;
use XDrive::Library;
use Token;

&main();

exit(0);

sub main {
   my $oCGI = new CGI;
   my $oDBO = new XDrive::DatabaseO;
   my $oErr = new XDrive::Error;

   ######
   ### Security Check
   ######
   my $oToken = xd_security_check($oDBO, $oCGI, $oErr);
   if ($oErr->Occurud || (! $oToken)) {
      XDErrorToBrowser("", "Security Violation:  No token", undef, $oToken);
   }

   my ($tmp_file, @stat_array, $stat_bytes, $meta_refresh, $percent,
$width_green, $width_red);
   my ($url, $tmp_file_string, @tmp_file_array, $error_code);

   my $tmp_path = XDFileUploadTempDir;

   my $oTemplate = new XDrive::Template( {'partner_code' => 'xdrv',
                                          'file'         =>
'file_upload__status.thtml'} );

   my $id                 = $oCGI->param('id');                ## unique
upload id
   my $nof                = $oCGI->param('nof');               ## number of
files
   my $nof_queried        = $oCGI->param('nof_queried');       ## nof
retrieved from db
   my $file_param         = $oCGI->param('tmp_file');          ## initial file
string
   my $total_file_string = $oCGI->param('total_file_string'); ## string of
all files
   my $param_uploaded     = $oCGI->param('uploaded');          ## bytes
uploaded
   my $bytes              = $oCGI->param('bytes');             ## total number
of bytes

   print $oCGI->header();
```


BNSDOCID <WO 0133381A1 | >

```
   ######
   ### First, if we're passed an upload id and no temp file params (files to
stat),
   ### then we either haven't queried the database yet and need to or need to
   ### query the database again because the number of files (nof) being
uploaded
   ### is greater than the number of files that our first database query
returned.
   ######

   if ($id && (! $file_param)) {
    . ### If this is the first pass, then percent will be a space and width
will be 0.
      $percent = $bytes ? int(100 * ($param_uploaded / $bytes)) : ' ';
      $width_green = ($percent eq ' ') ? 0 : $percent;
      $percent .= '%' unless $percent eq ' ';

      my $seconds;

      $width_red = &width_red($width_green);

      $oTemplate->tags( {'width_green' => $width_green,
                  'width_red'   => $width_red,
                        'percent'     => $percent});

      my $oSearch = new XDrive::DatabaseO::Search($oDBO);

      my ($cnt, $data) = $oSearch->uploadStatusSearch($id);

      ### If no rows were returned from the database, then redirect
      ### and re-query the database.
      if ($cnt == 0) {
         $oSearch->disconnect();

         $seconds = 0;

         $url = "/cgi-bin/file_upload_stat.cgi?" .
                "id=$id&nof=$nof&bytes=$bytes&uploaded=$param_uploaded";

         $meta_refresh = &buildMetaRefresh($seconds, $url);

         &connectingToServer($meta_refresh, $oTemplate);

         exit(0);
      }
      else {
         my $i = 0;

         $bytes      = $$data[$i][0];
         $error_code = $$data[$i][2];

         foreach (@$data) {
            $tmp_file = $$data[$i][1];

            push @tmp_file_array, $tmp_file;

            $i++;
         }

         $tmp_file_string = join '~', @tmp_file_array;

         if ($cnt == $nof) {
            $oSearch->disconnect();
```


NSDOCID: <WO_____0133381A1_I_>

```
            &statFilesTotal($bytes, $tmp_file_string, $oTemplate);

            exit(0);
         }

         $seconds = 0;

         $url  = "/cgi-bin/file_upload_stat.cgi?" .
                 "id=$id&nof=$nof&uploaded=$param_uploaded&" .
                 "nof_queried=$cnt&bytes=$bytes&tmp_file=$tmp_file_string";

         $meta_refresh = &buildMetaRefresh($seconds, $url);

         my $bytes_uploaded = ($param_uploaded > 0) ? $param_uploaded : '-';

         &redirect($meta_refresh, $bytes_uploaded, $bytes, $oTemplate);

         $oSearch->disconnect();

         exit(0);
      }
   }
   elsif ($file_param) {
      $oDBO->disconnect();

      my @file_array = split '~', $file_param;
      my $ary_cnt = @file_array;

      my ($uploaded_bytes, $seconds);

      if (scalar @file_array > 0) {
         foreach (@file_array) {
            @stat_array = stat("$tmp_path/$_");
            $stat_bytes = $stat_array[7];

            $uploaded_bytes += $stat_bytes;
            push @tmp_file_array, $_;
         }
         if ( ($uploaded_bytes == $param_uploaded) && ($nof > $nof_queried) )
{
            $seconds = 0;

            $url = "/cgi-bin/file_upload_stat.cgi?" .
                   "id=$id&nof=$nof&bytes=$bytes&uploaded=$param_uploaded";

            $meta_refresh = &buildMetaRefresh($seconds, $url);

            $percent = ($bytes == 0) ? 0 : int(100 * ($param_uploaded /
$bytes));
            $width_green = $percent;
            $percent .= '%';

            &redirect($meta_refresh, $uploaded_bytes,
                      $bytes, $oTemplate, $percent, $width_green);

            exit(0);
         }
         else {
            $tmp_file_string = join '~', @tmp_file_array;
         }
      }
```

```
        $percent = ($bytes == 0) ? 0 : int(100 * ($uploaded_bytes / $bytes));
        $width_green = $percent;
        $percent .= '%';

        $percent = ' ' if $width_green == 0;

        $seconds = 2;

        $url = "/cgi-bin/file_upload_stat.cgi?" .
               "id=$id&bytes=$bytes&nof=$nof&nof_queried=$nof_queried&" .
               "uploaded=$uploaded_bytes&tmp_file=$tmp_file_string";

        $meta_refresh = &buildMetaRefresh($seconds, $url);

        &redirect($meta_refresh, $uploaded_bytes, $bytes, $oTemplate, $percent,
$width_green);

        exit(0);
    }
    elsif ($total_file_string) {
        $oDBO->disconnect();
        &statFilesTotal($bytes, $total_file_string, $oTemplate);
    }
    else {
        $oDBO->disconnect();

        &closeWindow($oTemplate);

        exit(0);
    }
}

sub statFilesTotal ($$$) {
    my ($bytes, $tmp_file_string, $oTemplate) = @_;

    my $tmp_path = XDFileUploadTempDir;

    my @file_array = split '~', $tmp_file_string;

    my (@tmp_file_array, $uploaded_bytes, @stat_array, $stat_bytes);

    my $file_cnt = 0;

    foreach (@file_array) {
        if (-e "$tmp_path/$_") {
            @stat_array = stat("$tmp_path/$_");
            $stat_bytes = $stat_array[7];

            $uploaded_bytes += $stat_bytes;

            push @tmp_file_array, $_;

            $file_cnt++;
        }
    }

    if ($file_cnt == 0) {
        &closeWindow($oTemplate);

        exit(0);
    }
    else {
        my $percent = int(100 * ($uploaded_bytes / $bytes));
```


NSDOCID: <WO 0133381A1 I >

```
        my $width_green = $percent;

        $percent .= '%';

        $percent = ' ' if $width_green == 0;

        my $seconds = 2;

        my $url = "/cgi-bin/file_upload_stat.cgi?" .
                  "bytes=$bytes\&total_file_string=$tmp_file_string";

        my $meta_refresh = &buildMetaRefresh($seconds, $url);

        &redirect($meta_refresh, $uploaded_bytes, $bytes, $oTemplate, $percent,
$width_green);

        exit(0);
    }
}

sub redirect ($$$$;$$) {
   my ($meta_refresh, $bytes_uploaded, $bytes, $oTemplate, $percent,
$width_green) = @_;

   if ($bytes > 1024) {
      $bytes  = sprintf "%.f", ($bytes / 1024);
      $bytes .= 'k';
   }

   if ($bytes_uploaded > 1024) {
      $bytes_uploaded  = sprintf "%.f", ($bytes_uploaded / 1024);
      $bytes_uploaded .= 'k';
   }

   my $width_red = &width_red($width_green);

   $oTemplate->tags( {'meta_refresh'   => $meta_refresh,
                      'bytes_uploaded' => $bytes_uploaded,
                      'bytes_total'    => $bytes,
                      'percent'        => $percent,
                      'width_green'    => $width_green,
                  'width_red'      => $width_red} );

   $oTemplate->clear();

   print $oTemplate->get;
}

sub closeWindow ($) {
   my $oTemplate = $_[0];

   $oTemplate->load('file_upload_stat__window_close.thtml');

   print $oTemplate->get;
}

sub connectingToServer ($$) {
   my ($meta_refresh, $oTemplate) = @_;

   $oTemplate->load('file_upload__connecting.thtml');

   $oTemplate->tags( {'meta_refresh' => $meta_refresh} );
```


SUBSTITUTE SHEET (RULE 26) 0133391A1 I >

```
   print $oTemplate->get;
}

sub buildMetaRefresh ($$) {
   my ($seconds, $url) = @_;

   my $meta_refresh = "<meta http-equiv=refresh content=\"$seconds;
url=$url\">";

   return $meta_refresh;
}


sub width_red {
   my $width_green = shift;
   my $width_red = ((100 - $width_green) > 0)? 100 - $width_green : 0;

   return $width_red;
}
```

###folder_create.cgi

```
#!/usr/bin/perl
# Written by Martin Hald <mhald@uci.edu> on Sat, Jan 30, 1999.

use strict;
use vars qw(@ISA);
use lib ($ENV{PERL_XDRIVE_LIB});
#use lib qw(/export/home/xdrive/lib);

$ENV{'PATH'} = '/bin';
delete @ENV{qw(IFS CDPATH ENV BASH_ENV)};   # Make %ENV safer

@ISA = qw(XDrive::CGI);

use CGI::Carp 'fatalsToBrowser';
use Date::Format;
use Token;
use XDrive::CGI qw(:MAIN);
use XDrive::Client::Security;
use XDrive::Client::Actions;

use CGI;
use XDrive::DatabaseO;
use XDrive::Error;

&main;
exit;

sub main
      {
      my $oCGI = new CGI;
      my $oDBO = new XDrive::DatabaseO;
      my $oErr = new XDrive::Error;

      ####
      ## Attempt to authenticate the user
      ####

      my $oToken = xd_security_check($oDBO,$oCGI,$oErr);

      ####
      ## If the authentication failed then redirect to the
      ## error cgi and exit
      ####

      if ($oErr->Occurud)
            {
            xd_fatal_error($oCGI,$oErr);
            exit;
            }

      ####
      ## Otherwise we know that we have a valid session and
      ## can continue normally
      ####

      my $oAction = new XDrive::Client::Actions
            (
            $oToken,
            $oCGI
```


BNSDOCID: <WO 013338141 >

```
        );

    $oAction->FolderCreate();
    xd_web_buttonindex($oCGI);
    $oAction->DisconnectDB();
    return 0;
    }
```

###forgot_password.cgi

```
#!/usr/bin/perl

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI qw(param header);
use CGI::Carp qw(fatalsToBrowser);
use Token;
use XDrive::CGI ();
use XDrive::Template;
use XDrive::Client::Registration;
use XDrive::DatabaseO::Transaction;
use XDrive::DatabaseO::Table::DiskAccount;
use XDrive::DatabaseO::Table::UserData;
use XDrive::DatabaseO::Search;
use XDrive::Library;
use XDrive::Utils::RandomString;

use Mail::Sendmail;

use constant TRUE => (1==1);
use constant FALSE => ! TRUE;

######################
my $request_template = "forgot_password__request.thtml";
my $thank_you_template = "forgot_password__t_y.thtml";
my $alert_template = "forgot_password__alert.thtml";
my $email_template = "password_admin__email.thtml";
######################

exit &main();

sub main {
    my $oCGI = CGI->new();

    my $sEmailAddress = $oCGI->param('txtEmailAddress');
    my $sUsername     = $oCGI->param('txtUsername');

    my $oContent    = new XDrive::Template( {'partner_code' => 'xdrv'} );
    my $oNavigation = new XDrive::Template( {'partner_code' => 'xdrv'} );
    my $oLayout     = new XDrive::Template( {'partner_code' => 'xdrv'} );

    ## Load the required template HTML files.
    $oNavigation->load("front_nav.thtml");
    $oContent->load("front_signup.thtml");
    $oLayout->load("layout.thtml");

    if ( ($sEmailAddress) && ($sUsername) ) {
      ## Change user's password
      my @characters = ('a'..'z','A'..'Z','0'..'9');
      my $sRandomKey = XDRandomString(8,\@characters);
      if(&PasswordSet($oContent,$sUsername, $sEmailAddress, $sRandomKey)) {
          sendMail($oContent,$sUsername, $sRandomKey, $email_template);
      }
      &display_form($oContent,$thank_you_template);

    } else {
      &display_form($oContent,$request_template);
```


BNSDOCID: <WO 01333381A1 >

```
    }

    ## Print out the HTML and exit
    $oLayout->tags
            ({
            'header_graphic' => 'header_fill.gif',
            'title' => 'What is my password?',
            'content' => $oContent->get,
            'navigation' => $oNavigation->get,
            });
    $oLayout->clear;

    print header,$oLayout->get;
    return 0;
}

sub PasswordSet
{
    my($oContent,$sUsername, $sEmailAddress, $sPassword) = @_;
    my $bReturnValue = 0;
    my $status;
    my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount->new();
    my $oUser = XDrive::DatabaseO::Table::UserData->new(undef, $oDiskAccount-
>fetchDBO());

    $oDiskAccount->loadWhere("USERNAME", $sUsername);
    $oUser->loadWhere("SEQ", $oDiskAccount->fetchColumn("USER_SEQ"));

    if (  (defined $oDiskAccount->fetchColumn("USER_SEQ"))
        &&($oUser->fetchColumn("EMAIL_ADDRESS") eq $sEmailAddress)
        )
    {
      my $sPassEncrypted = XDEncrypt($sPassword);
      $oDiskAccount->setColumn("PASSWORD", $sPassEncrypted);
      $oDiskAccount->update();
      $oDiskAccount->commit();
      $bReturnValue = 1;

    } elsif(  (defined $oDiskAccount->fetchColumn("USER_SEQ"))
            &&($oUser->fetchColumn("EMAIL_ADDRESS") ne $sEmailAddress)
          )
    {
      &sendMail($oContent,$sUsername, "", $alert_template, " NOT");
    }

    $oDiskAccount->finish();
    $oDiskAccount->disconnect();

    return $bReturnValue;

}

sub display_form {
    my ($oContent,$template) = @_;
    $oContent->load($template);
}

sub sendMail {
    my ($oContent,$username, $password, $template, $not) = @_;


    my ($name_first, $name_last, $email_address, $data);
    my $oSearch = XDrive::DatabaseO::Search->new(undef);
```

```
    $data = $oSearch->XDUserInfoByUsername($username);
    $name_first = $data->[0]->[0];
    $name_last = $data->[0]->[1];
    $email_address = $data->[0]->[2];
    $username = $data->[0]->[3];

    my $message = &get_message($oContent,$name_first, $name_last, $username,
$password, $template);

    my %toXdrive =
            (
            To      => "$name_first $name_last <$email_address>",
            Bcc     => '',
            From    => "support\@xdrive.com",
            Message => $message,
            Subject => "X:drive Password$not Updated!"
             );

    sendmail(%toXdrive);
}

sub get_message {
    my ($oContent,$name_first, $name_last, $username, $password, $template) =
@_;

    $name_first = ($name_first)? $name_first : "";
    $name_last = ($name_last)? $name_last : "";

    $oContent->load($template);
    $oContent->tags
      ({
            'name_first' => $name_first,
            'name_last' => $name_last,
            'password' => $password,
            'username' => $username,
        });

    return $oContent->get;
}
```

###forgot_username.cgi

```
#!/usr/bin/perl

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI qw(header param);
use CGI::Carp qw(fatalsToBrowser);
use Mail::Sendmail;

use Token;
# use XDrive::CGI qw(:MAIN);
use XDrive::Template;
use XDrive::DatabaseO::Search;
use XDrive::Library;
use XDrive::Utils::RandomString;

use constant TRUE => (1==1);
use constant FALSE => ! TRUE;

######################
my $invalid_template = "invalid_email.thtml";
my $request_template = "forgot_username__request.thtml";
my $thank_you_template = "forgot_username__t_y.thtml";
my $email_template = "forgot_username__email.thtml";
######################

exit &main();

sub main {
    my $oCGI = CGI->new();

    my $sEmailAddress = $oCGI->param('txtEmailAddress');
    my ($ar_usernames, $length);

    my $oSearch = XDrive::DatabaseO::Search->new(undef);

    my $oContent = new XDrive::Template;
    my $oNavigation = new XDrive::Template;
    my $oLayout = new XDrive::Template;

    $oContent->partner('xdrv');
    $oNavigation->partner('xdrv');
    $oLayout->partner('xdrv');

    ## Load the required template HTML files.
    $oNavigation->load("front_nav.thtml");
    $oLayout->load("layout.thtml");

    ## IF a parameter of email adress has been processed
    ## and in the correct format, then retreive usernames
    ## associated with the email and send them.

if ($sEmailAddress)
{
## * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
## added by kanlaya to check for correct email format
## * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

    if ($sEmailAddress =~ /.*\@.*\./)
```


NSDOCID: <WO_____0133381A1_I_>

```
            {

            ## Takes the email_address and returns an array_ref
            ## of all the disk_account.usernames accociated
            ## with that users user.email_address
            $ar_usernames = $oSearch->XDUsernameFromEmail($sEmailAddress);
            $length = @$ar_usernames;

            ## IF there are usernames found for this address,
            ## then email the address the list of usernames.
            if($length > 0)
            {
            &sendMail($ar_usernames, $sEmailAddress, $length);
            }

            $oContent->load($thank_you_template);
            $oContent->tags({'emailAddress' => $sEmailAddress,});

            }
      else
            {$oContent->load($invalid_template);}
## * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
## end add
## * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
}
else
      {$oContent->load($request_template);}

    ## Print out the HTML and exit
    $oLayout->tags
            ({
            'header_graphic' => 'header_fill.gif',
            'title' => 'What is my username?',
            'content' => $oContent->get,
            'navigation' => $oNavigation->get,
            });
    $oLayout->clear;

    print header, $oLayout->get;

    return 0;
}

sub sendMail {
    my ($usernames, $email, $length) = @_;


    my $message = &get_message($usernames, $email, $length);

    my %toXdrive =
            (
            To      => "$email",
            Bcc     => '',
            From    => "support\@xdrive.com",
            Message => $message,
            Subject => "X:drive Username Reminder"
             );

    sendmail(%toXdrive);
}

sub get_message {
    my ($usernames, $email, $length) = @_;
```


BNSDOCID: <WO 0133381A1 | >

```
    my ($sUsername, $sPluralS, $sPluralVerb);
    $sUsername = join("\n", @$usernames);
    $sPluralS = ($length > 1)? "s" : "";
    $sPluralVerb = ($length > 1)? "are" : "is";

    my $oForm = new XDrive::Template;
    $oForm->partner('xdrv');

    $oForm->load($email_template);
    $oForm->tags
      ({
            'sEmailAddress' => $email,
            'sUsername' => $sUsername,
          'sPluralS' => $sPluralS,
          'sPluralVerb' => $sPluralVerb
        });
      $oForm->clear;

    return $oForm->get;
}
```


NSDOCID: <WO_____0133381A1_I_>

###frame_generic.cgi

```
#!/usr/bin/perl
## Written by Matt Clapp on 6/28/99
## This CGI allows us to pass the sst and sid on to the inner frame

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use CGI::Carp qw(fatalsToBrowser);
use Token;
use XDrive::Library;
use XDrive::Template;
use XDrive::DatabaseO;
use XDrive::Error;
use XDrive::Client::Security;
use XDrive::CGI qw(XDErrorToBrowser);
use XDrive::CGI::Cookie;

&main;
exit;

sub main
      {
      my $oCGI = CGI->new();

      my $oCookie = XDrive::CGI::Cookie->new('x_session_info', $oCGI);
      my $language = $oCookie->getElement('language');
      $language = 'english' unless $language;

      my $sThtmlFile   = $oCGI->param('thtml');
      my $sFrameHeight = $oCGI->param('sFrameHeight');

      if ($sFrameHeight == "")
            {
            $sFrameHeight="40";
            }

      if ($sThtmlFile eq 'download_client.thtml')
            {
            my $oTemplate = new XDrive::Template( { 'partner_code' => 'xdrv'}
);
            $oTemplate->load($sThtmlFile);
            $oTemplate->tags( {'sFrameHeight' => $sFrameHeight,
                               'language'     => $language} );
            print "Content-type: text/html\n\n";
            print $oTemplate->get();
            }
      elsif ($sThtmlFile eq 'centerview.thtml')
            {
            my $sFrameSet;
            if ($sFrameHeight > 1)
                  {
                  $sFrameSet = "$sFrameHeight,*";
                  }
            else
                  {
                  $sFrameSet = "100%,*";
                  }
```

```
            print <<EOM;
Content-type: text/html


<FRAMESET ROWS="$sFrameSet" BORDER=0 FRAMEBORDER=0 MARGINWIDTH=0
MARGINHEIGHT=0 TOPMARGIN=0 LEFTMARGIN=0 frameBorder=0 frameSpacing=0>
EOM

            if ($sFrameHeight > 1)
                  {
                  print <<EOM;
        <FRAME NAME='controls' SRC='/explorer/$language/buttons.html'
SCROLLING=NO MARGINWIDTH=0 MARGINHEIGHT=0 TOPMARGIN=0 LEFTMARGIN=0>
EOM
                  }

            print <<EOM;
        <FRAME NAME='userData' SRC='/cgi-bin/explorer_user_data.cgi'
SCROLLING=AUTO MARGINWIDTH=0 MARGINHEIGHT=0 TOPMARGIN=0 LEFTMARGIN=0>
</FRAMESET>
EOM
            }
      else
            {
            ## Security check.  Since the thtml file is passed in via the URL
the server
            ## can be hacked by passing in ../ offsets to get the directory
the hacker
            ## wants.  A cleaner way would be to pass in a number and use
that number
            ## to access a hash, and die with a security violation if no such
has key
            ## exists.

            my $oDBO = XDrive::DatabaseO->new(undef,undef);
            my $oErr = new XDrive::Error;
            my $oToken = xd_security_check($oDBO,$oCGI,$oErr);

            ####
            ## If the user failed to autenticate or an error occured then
            ## redirect them to the error CGI and exit
            ####

            if ($oErr->Occurud)
                  {
                  xd_fatal_error($oCGI,$oErr);
                  $oDBO->disconnect();
                  }

            warn "#ALERT hacking attempt by ".$oToken->data('user').
                  " from ".$ENV{REMOTE_IP};
            my $sMessage = $oErr->ReturnMessageGivenCode(341);
            XDErrorToBrowser("",$sMessage,undef,$oToken);
            $oDBO->disconnect();
            exit;
            }
}
```

###get_a_shared_file.cgi

```
#!/usr/bin/perl

use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use CGI::Carp qw(fatalsToBrowser);

use XDrive::CGI;
use XDrive::Template;
use XDrive::DatabaseO::Table::DiskItemShare;
use XDrive::DatabaseO::Table::DiskAccount;
use XDrive::DatabaseO::Table::UserData;
use XDrive::DatabaseO::Table::Reseller;
use XDrive::CGI::Cookie;

use strict;

exit &main();

sub main {
      my $cgi = CGI->new();
      my ($ClaimTicket, $oPage, $xdDBH);

      if ($ENV{'QUERY_STRING'} !~ /=/)
            {
            $ClaimTicket = $ENV{'QUERY_STRING'};
            }
      else
            {
            $ClaimTicket = $cgi->param("claim_ticket");
            }

      if (length($ClaimTicket) < 5)
            {
            $ClaimTicket = $ENV{'PATH_INFO'};
            $ClaimTicket =~ s/^\///;
            }

      ##make sure that if claim ticket ends in -SP we set language to spanish
and
      ##truncate claim ticket
      if ($ClaimTicket =~ /-SP$/)
      {
            $ClaimTicket = substr($ClaimTicket,0,length($ClaimTicket)-3);
            my $oCookie = new XDrive::CGI::Cookie('x_session_info', $cgi);
            $oCookie->setElement
                ({
                'language' => 'spanish',
                });

            print "Set-Cookie: ". $oCookie->asString();
      }

      my $oDiskItemShare = XDrive::DatabaseO::Table::DiskItemShare->new();
      $oDiskItemShare->loadWhere("RANDOM_KEY", $ClaimTicket);

      my $diskAccount = $oDiskItemShare-
>fetchColumn("DISK_ACCOUNT_USER_SEQ");
      $xdDBH = $oDiskItemShare->fetchDBO();
```

```
      my $oUserAccount = XDrive::DatabaseO::Table::UserData->new(undef,
$xdDBH);
      $oUserAccount->loadWhere("SEQ", $diskAccount);

        my $oReseller = XDrive::DatabaseO::Table::Reseller->new(undef,
$xdDBH);
        $oReseller->loadWhere("SEQ", $oUserAccount-
>fetchColumn("RESELLER_SEQ"));

      my $partner = $oReseller->fetchColumn("CODE");

      ## If the disk item share was not in the database then just use an
xdrive
      ## look n' feel.  NOTE!!!!! This should be changed to a plain looking
      ## error screen.
      $partner = 'xdrv' if ! defined $partner;

      $oPage = new XDrive::Template
            ({
              'partner_code' => $partner
                  });

      $oPage->load('get_a_shared_file__frameset.thtml');
      $oPage->tags
            ({
            'ClaimTicket' => $ClaimTicket,
            'referee' => $diskAccount,
            });
      $oPage->clear();
      print $cgi->header, $oPage->get;

      $oDiskItemShare->disconnect();
      return 0;
      }
```


INSDOCID: <WO 01333814A1 >

###get_a_shared_file_download.cgi

```
#!/usr/bin/perl

use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use Data::Dumper;
use XDrive::CGI qw(:MAIN);
use XDrive::Client::Actions;
use XDrive::DatabaseO::Search;
use XDrive::DatabaseO::Table::UserData;
use XDrive::DatabaseO::Table::DiskItemShare;
use XDrive::Template;
use XDrive::Error;

use strict;

&main;
exit;

sub main
      {
      my ($sFileDescription, $sFileSize, $sRandomKey, $sSeq);

      my $cgi = CGI->new();
      my $oErr = new XDrive::Error;
      my $g_oShared;    ## Shared object
      my $g_oSearch;    ## Shared object
      my $g_oAction;    ## Action object
      my $g_oFileStat; ## File stats
      $sRandomKey = $ENV{'QUERY_STRING'};

      if (!$sRandomKey)
            {
            my $sMessage = $oErr->ReturnMessageGivenCode(1360);
                &display_error($sMessage,$oErr);
            }
      else
            {
            ## Instantiate and load the shared object.
            $g_oShared = XDrive::DatabaseO::Table::DiskItemShare->new(undef,
undef);
            $g_oSearch = XDrive::DatabaseO::Search->new($g_oShared-
>fetchDBO());

            $g_oShared->loadWhere("RANDOM_KEY", $sRandomKey);
            $sSeq = $g_oShared->fetchColumn("SEQ");

            if(!$sSeq)
                  {
                  my $sMessage = $oErr->ReturnMessageGivenCode(1361);
                  &display_error($sMessage,$oErr);
                  }

            ## Call the client action constructor with the shared object
            ## which it will use to load all the needed client information.
            $g_oAction = new XDrive::Client::Actions($g_oShared,$cgi);

            my $sFile = join
                        ('/',
```

```
                        $g_oShared->fetchColumn("ITEM_PATH"),
                        $g_oShared->fetchColumn("ITEM_NAME")
                        );
            $g_oFileStat = $g_oAction->FileStat($sFile);

            if (!$g_oFileStat) {
                  my $sMessage = $oErr->ReturnMessageGivenCode(1362);
                  &display_error($sMessage,$oErr);
            } else {

                $sFileDescription = $g_oShared->fetchColumn("DESCRIPTION");
                  $sFileSize = ($g_oFileStat->size() > 1024)?
int($g_oFileStat->size()/1024) . "K" :

$g_oFileStat->size() . " bytes";


                  &display_form($g_oShared-
>fetchColumn("ITEM_NAME"),$sRandomKey, $sFileSize,
$sFileDescription,$g_oSearch->XDResellerCodeFromUserSeq($g_oShared-
>fetchColumn("DISK_ACCOUNT_USER_SEQ")));
                  }
            }
            $g_oShared->finish();
            $g_oShared->disconnect();
            $g_oAction->DisconnectDB();
      }


sub display_form
      {
      my ($sFilename,$sRandomKey, $sFileSize, $sFileDescription,$sPartner)
=@_;

      my $oForm = new XDrive::Template;
      $oForm->partner($sPartner);
      $oForm->load('get_a_shared_file__download_screen.thtml');
      $oForm->tags
            ({
            'sFilename' => $sFilename,
            'sExtraPathInfo' => $sFilename,
            'sRandomKey' => $sRandomKey,
            'sFileSize' => $sFileSize,
            'sFileDescription' => $sFileDescription,
            });

      $oForm->clear();
      print "content-type: text/html\n\n", $oForm->get;
      exit(0);
      }

sub display_error
      {
      my ($message,$oErr) = @_;

       if (!$message)
       {
              $message = $oErr->ReturnMessageGivenCode(1363);
       }

       my $oForm = new XDrive::Template;
       $oForm->partner('xdrv');
       $oForm->load('get_a_shared_file__error.thtml');
```


NSDOCID: <WO_____0133381A1_I_>

```
        $oForm->tags
        ({
                'message' => $message,
        });
        print "content-type: text/html\n\n", $oForm->get;
        exit(0);
}
```

###login.cgi

```
#!/usr/bin/perl
# Written by Martin Hald <mhald@geotribe.com> to verify that the user is
# good to login, if they are then log them in and otherwise redirect to
# a not authorized page.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});
use XDrive::DatabaseO::Table::DiskAccount;
use XDrive::DatabaseO::Table::UserSettings;
use XDrive::DatabaseO::Table::UserQuota;
use XDrive::DatabaseO::Table::Language;
use XDrive::DatabaseO::Search;
use CGI qw(param redirect header cookie);
use CGI;
use XDrive::CGI::Cookie;
use CGI::Carp qw(fatalsToBrowser);

use XDrive::CGI;
use XDrive::Client::Security;
use XDrive::Error;
use XDrive::Template;
use XDrive::Library;
use XDrive::DatabaseO;
use Mail::Sendmail;

&main;
exit;

sub main
      {
      my $oCGI     = new CGI;
      my $oErr     = new XDrive::Error;
      ##my $oDBO     = new XDrive::DatabaseO;
      my $oCookie = new XDrive::CGI::Cookie('x_session_info', $oCGI);

      my $oToken;
      my $sToken;
      my $sUsername;
      my $sPartnerCode;
        ## johngaa add for dbexist check
        my $oDBO;

        if (XDDBConnectionCheck() && XDNFSCheck())
        {
           $oDBO = new XDrive::DatabaseO;
        }
        else
        {
           $oDBO = undef;
           print redirect("/upgrading_index.html");
           exit;
        }
        ## end of johngaa change
     my $bSecurity = $oCGI->param('bSecurity');
     my $sPartnerToken = $oCGI->param('partner_token');

       my $passed_lang = $oCGI->param('language');

     #####
```

```
    ## Attempt to authenticate the user by using one of the following two
    ## authentication methods: username/password pair or partner token
    ## authentication.
    #####
    if (! defined $sUsername && length($sPartnerToken) > 20)
          {
          authPartnerUser($oCGI,$oErr,$oDBO,\$sUsername,\$oToken,
                \$sPartnerCode,$sPartnerToken);
          $sToken = $oToken->name();
          }
    else
          {
          authWebSiteUser($oCGI,$oErr,$oDBO,\$sUsername,\$oToken);
          $sPartnerCode = 'xdrv';
          }

    #####
    ## If an error occurud while trying to create a token then redirect
    ## the user to the error page.
    #####
    if ($oErr->Occurud)
          {
          $oDBO->disconnect;
          xd_fatal_error($oCGI,$oErr);
          exit;
          }

    #####
    ## If we have gotten here then we have an authenticated user.
    #####

    #####
    ## Build and print out cookies
    #####
    my $sLanguage = getLanguage($oDBO,$sUsername);


      ##check if user's language is the same as passed language
      if ((length($passed_lang) > 0) && $sLanguage ne $passed_lang)
      {
         ##update db here to new language
         setLanguage($oDBO,$sUsername,$passed_lang);
         ##update session to new language
         $sLanguage = $passed_lang;
      }


##delete the promo cookie;  this will not be set here and we
##don't want an old one hanging out
##promo cookies should be set in promo.cgi
$oCookie->deleteElement('promo') if $oCookie->getElement('promo');

    $oCookie->setElement
          ({
          'language' => $sLanguage,
          'partner' => $sPartnerCode,
          });

    print "Set-Cookie: ". $oCookie->asString();
    print "Set-Cookie: SST=$sToken; domain=.xdrive.com; path=/\n"
          if $sPartnerCode ne 'xdrv';
```

```
        #####
        ## write user login to the database
        #####
        &incrementLoginNumber($oDBO,$sUsername,$sLanguage,$sPartnerCode);


        #####
        ## Send the user off into thier file explorer
        #####
        if ($ENV{'HTTP_USER_AGENT'} =~ /^xdwin/)
              {
              print $oCGI->redirect("?sst=".$oToken->name()."&sid=0");
              }
        else
              {
              xd_web_open($oCGI, "", "", \%ENV, $bSecurity);
              }

        $oDBO->disconnect;
        return 0;
        }


sub isYesterday()
{
##
## Date: 01/25/99
## used to check of a date if its today or not
##
         my $last_login = shift;
         my $nSec;                    ## Seconds
         my $nMin;                    ## Minutes
         my $nHour;                   ## Hours
         my $sDay;                    ## Weekday
         my $nDay;                    ## Numeric date (01-31)
         my $nMonth;                  ## Numeric month (01-12)
         my $nYear;                   ## Numeric year (00-99)


         my $todaysDate = ($nSec, $nMin, $nHour, $nDay, $nMonth, $nYear,
$sDay) = (localtime(time))[0,1,2,3,4,5,6];

         $last_login =~ /([\d]+)-([\d]+)-([\d]+)/i;
         my $last_login_year  = int($1);
         my $last_login_month = int($2);
         my $last_login_day   = int($3);

         if ($last_login_year < $nYear)
         {
            return 1;
         }
         if ($last_login_month < $nMonth)
         {
            return 1;
         }
         if ($last_login_day < $nDay)
         {
            return 1;
         }
         return 0;

}
```


INSDOCID: <WO 01333381A1 >

```
sub incrementLoginNumber()
      {
      my $oDBO = shift;
      my $sUsername = shift;
      my $sLanguage = shift;
      my $sPartnerCode = shift;

      my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount-
>new(undef,$oDBO);
      $oDiskAccount->loadWhere("USERNAME", $sUsername);
      $oDiskAccount->finish;
      my $timesLoggedIn = $oDiskAccount->fetchColumn("LOGIN_NUM");
      my $user_seq = $oDiskAccount->fetchColumn("USER_SEQ");


        ## johngaa add
        ## insert a warn in the error log if this is the
      if ($ENV{'HTTP_USER_AGENT'} =~ /^xdwin/)
        {
           my $todaysDate = XDToday();
           warn "#client_login user_seq=$user_seq username=$sUsername
date=$todaysDate#";
        }
        ## end of johngaa warn of first entry



      if ($timesLoggedIn)
            {
            $timesLoggedIn++;
            }
      else
            {
            $timesLoggedIn=1;
            }

          $oDiskAccount->setColumn("LOGIN_NUM", $timesLoggedIn);
          $oDiskAccount->setColumn("LAST_LOGIN",XDToday());

          my $status = $oDiskAccount->update();

          if ($status > -1)
            {
                  $oDiskAccount->commit();
                  $oDiskAccount->finish();

                        ## johngaa modify to exclude college club
                        ## and quepasa users out of the extra space
                        ## promo

                        my $oUserData = XDrive::DatabaseO::Table::UserData-
>new(undef,$oDBO);
                        $oUserData->loadWhere("SEQ", $user_seq);
                        my $reseller_seq = $oUserData-
>fetchColumn("RESELLER_SEQ");
                        if (!(isResellerSeqCC_QUPA($oDBO,$reseller_seq)))
                        {
                     ##give user extra 10MB if 10th login
                     if ($timesLoggedIn == 10)
                     {
                        my $oUserQuota = XDrive::DatabaseO::Table::UserQuota-
>new(undef,$oDBO);
```

```
                        $oUserQuota->loadWhere("USER_SEQ", $user_seq);
                        my $additional_quota = $oUserQuota-
>incrementQuota($user_seq,10240);
                        if ($additional_quota > 0)
                        {
                              &send_email($user_seq, $oDBO,
$additional_quota,$sLanguage, $sPartnerCode);
                        }
                     }
                        }
            }
          else
            {
            # $oDiskAccount->rollback();
            }

}

sub isResellerSeqCC_QUPA
{
   my $oDBO = shift;
   my $reseller_seq = shift;
   my $dbh = $oDBO->fetchDBH();

   my $sql_stmt = "SELECT code FROM reseller WHERE seq=?";
   my $cmd;
   my @data;

   $cmd = $dbh->prepare($sql_stmt);
   $cmd->execute(($reseller_seq));
   @data = $cmd->fetchrow_array;
   if ($data[0] eq 'cc' || $data[0] eq 'qupa')
   {
      return 1;
      ##print "should return  a true\n"
   }
   return 0;
}


sub send_email
{
      my $user_seq = shift;
        my $oDBO = shift;
      my $additional_quota = shift;
      my $sLanguage = shift;
      my $sPartnerCode = shift;

      if ($sPartnerCode eq 'cc')
      {
            return;
      }


      ##comes in as k, change to megabytes
      my $mbs = $additional_quota/1024;

        my $oUserData = XDrive::DatabaseO::Table::UserData->new(undef,$oDBO);
        $oUserData->loadWhere("SEQ", $user_seq);
        my $email_address = $oUserData->fetchColumn("EMAIL_ADDRESS");
        my $name_first = $oUserData->fetchColumn("NAME_FIRST");
        my $name_last = $oUserData->fetchColumn("NAME_LAST");
```


3NSDOCID: <WO 0133381A1 | >

```
        my $oTemplate =  new XDrive::Template
      ({
        'language'     => $sLanguage,
        'partner_code' => $sPartnerCode,
        });

        $oTemplate->load('received_10MB_10logins.thtml');
      $oTemplate->tags({
            'mbs' => $mbs,
            });
        $oTemplate->clear();
        my $message = $oTemplate->get;

        my %toXdrive =
            (
            To      => "$name_first $name_last <$email_address>",
            Bcc     => '',
            From    => "support\@xdrive.com",
            Message => $message,
            Subject => "Congratulations!"
             );

        sendmail(%toXdrive);
}

sub authPartnerUser
{
      my $oCGI = shift;
      my $oErr = shift;
      my $oDBO = shift;
      my $rsUsername = shift;
      my $roToken = shift;
      my $rsPartnerCode = shift;
      my $sPartnerToken = shift;

      my $oCookie = new XDrive::CGI::Cookie('x_session_info', $oCGI);

      my $oPartnerToken = new Token
            ({
            'err' => $oErr,
            'dbh' => $oDBO,
            });
      $oPartnerToken->load($sPartnerToken);

      return if $oErr->Occurud;

      $$roToken = new Token
            ({
            'dbh' => $oDBO,
            'err' => $oErr,
            'user_sequence' => $oPartnerToken->data('user_seq'),
            });
      $$roToken->create();

      return if $oErr->Occurud;

      ### Edited by Justin so that the partner_code is looked for
      ### in the cookie instead of the token table.
      ### And then again because I shouldn't have done that.  The
      ### partner code hasn't been set in the cookie by this point,
      ### so we shouldn't be looking in there for it.
      $$rsPartnerCode = $oPartnerToken->data('partner_code');
      # $$rsPartnerCode = $oCookie->getElement('partner');
```

```
        $$rsUsername = $oPartnerToken->data('user');

        $$roToken->data('ip',$ENV{REMOTE_ADDR});
        $$roToken->data('browser',$ENV{HTTP_USER_AGENT});
        $$roToken->data('user',$$rsUsername);
        $$roToken->data('user_seq',$oPartnerToken->data('user_seq'));
        $$roToken->data('partner_code',$$rsPartnerCode);
        $$roToken->data('disk_account_seq',$oPartnerToken-
>data('disk_account_seq'));
        $$roToken->save;

        $oPartnerToken->delete();
}

sub authWebSiteUser
        {
        my $oCGI = shift;
        my $oErr = shift;
        my $oDBO = shift;
        my $rsUsername = shift;
        my $roToken = shift;

        my $sPassword = $oCGI->param('pass');
        $$rsUsername = $oCGI->param('user');

        if (xd_auth_password($$rsUsername,$sPassword,$oDBO))
                {
                ## Login the user info X:drive and get the session token
                $$roToken = xd_login($oCGI, $$rsUsername, $oErr, $oDBO);
                }
        else
                {
                $oErr->AddErrorByErrorCode('501');
                }
        }

sub getLanguage
        {
        my $oDBO = shift;
        my $sUsername = shift;

        my $language;

        ## get the user's language out of the database
        my $oDiskAccount =  XDrive::DatabaseO::Table::DiskAccount-
>new(undef,$oDBO);
        $oDiskAccount->loadWhere("USERNAME", $sUsername);
        $oDiskAccount->finish;
        my $userSeq = $oDiskAccount->fetchColumn("USER_SEQ");

        my $oUserSettings = XDrive::DatabaseO::Table::UserSettings-
>new(undef,$oDBO);
        $oUserSettings->loadWhere("USER_SEQ",$userSeq);
        $oUserSettings->finish;
        my $language = $oUserSettings->fetchColumn("LANGUAGE");

        if ($language eq '')
                {
                $language = 'english';
                }
        else
                {
                ## Get language from database given code
```


INSDOCID: <WO 0133381A1 | >

```
            my $oLanguage = XDrive::DatabaseO::Table::Language-
>new(undef,$oDBO);
            $oLanguage->loadWhere("SEQ",$language);
            $oLanguage->finish;
            $language = $oLanguage->fetchColumn("CODE");
            }

      return $language;
      }


sub setLanguage
{
        ##set the LANGUAGE column of the User_Settings table to passed
language


      my $oDBO = shift;
      my $sUsername = shift;
      my $language = shift;

        my ($rv,$errorCode);

      ## get the user's language out of the database
      my $oDiskAccount =  XDrive::DatabaseO::Table::DiskAccount-
>new(undef,$oDBO);
        ##grab right table
      $oDiskAccount->loadWhere("USERNAME", $sUsername);
      $oDiskAccount->finish;
      my $userSeq = $oDiskAccount->fetchColumn("USER_SEQ");

      my $oUserSettings = XDrive::DatabaseO::Table::UserSettings-
>new(undef,$oDBO);
      $oUserSettings->loadWhere("USER_SEQ",$userSeq);
      $oUserSettings->finish;

        ##grab the seq number of the LANGUAGE being passed
        my $oLanguage = XDrive::DatabaseO::Table::Language->new(undef,$oDBO);
        $oLanguage->loadWhere("CODE",$language);
        $oLanguage->finish();
        my $seq_lang = $oLanguage->fetchColumn("SEQ");

        eval
        {
           ##
           ##set language here
           $rv = 0;
           $oUserSettings->setColumn('LANGUAGE',$seq_lang);
           $rv = $oUserSettings->update();
        };
        if ($rv == 0)
        {
            $oUserSettings->rollback();
            $errorCode = 0;
        }
        else
        {
            $oUserSettings->commit();
            $errorCode = 1;
        }
        return $errorCode;
}
```

###logout.cgi

```
#!/usr/bin/perl
## Program to log the user out, currently hacked to redirect to the homepage.
## Modified by Justin on 10/15/99 to be Security.pm friendly
## and get rid of the XDrive::CGI stuff.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use CGI::Carp qw(fatalsToBrowser);
use XDrive::Client::Security;
use XDrive::DatabaseO;
use XDrive::Error;

&main;
exit;

sub main
      {
      my $oCGI    = CGI->new();
      my $oDBO    = new XDrive::DatabaseO;
      my $oError = new XDrive::Error;

      ##removes token from the database
      xd_logout($oDBO, $oCGI, $oError);

      $oDBO->disconnect;

      print $oCGI->redirect('/');
      return 0;
      }
```


VSDOCID: <WO_____0133381A1_I_>

###navbar.cgi

```
#!/usr/bin/perl
## Written by Martin Hald <martin@xdrive.com> on Sun Sep 5 1999
## Script to dynamically show the correct tempate based on which
## partner is looking at the web site.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use XDrive::Library;
use XDrive::Template;
use XDrive::Error;
use XDrive::DatabaseO;
use XDrive::Client::Security;

&main;
exit;

sub main
      {
      ## Load the session token
      my $oErr    = new XDrive::Error;
      my $oDBO    = new XDrive::DatabaseO;
      my $oCGI    = new CGI;
      my $oCookie = new XDrive::CGI::Cookie('x_session_info', $oCGI);

      ####
      ## Attempt to autenticate the user
      ####

      my $oToken = xd_security_check($oDBO,$oCGI,$oErr);

      ####
      ## If the user does not validate or an error occurud
      ## then redirect to the error CGI and exit
      ####

      if ($oErr->Occurud)
            {
            xd_fatal_error($oCGI,$oErr);

            $oDBO->disconnect();

            exit;
            }

      ####
      ## Otherwise we have validated and should load the navbar
      ## associated with the partner
      ####
      ### Edited by Justin so that partner_code is looked for in
      ### the cookie instead of the token table.
      # my $oForm = new XDrive::Template
      #      ({
      #      'partner_code' => $oToken->data('partner_code')
      #      });

      my $oForm = new XDrive::Template
            ({
```

```
        'partner_code' => $oCookie->getElement('partner')
        ));

    $oForm->load('navbar.thtml');

    ####
    ## Print the navbar and stop
    ####

    print "Content-type: text/html\n\n";
    print $oForm->get;

    $oDBO->disconnect();

    return 0;
    }
```


ISDOCID: <WO_____0133381A1_I_>

###password_change.cgi

```
#!/usr/bin/perl
## Written by Lucas McGregor on ???

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI qw(header param);
use CGI::Carp qw(fatalsToBrowser);

use Token;
use XDrive::DatabaseO;
use XDrive::Error;
use XDrive::CGI qw(:MAIN);
use XDrive::Client::Security;
use XDrive::Client::Registration;
use XDrive::DatabaseO::Transaction;
use XDrive::DatabaseO::Table::DiskAccount;
use XDrive::Library;
use XDrive::Template;

use constant TRUE => (1==1);
use constant FALSE => ! TRUE;

&main;
exit;

sub main
      {
        my $oCGI    = CGI->new();
        my $oDBO    = new XDrive::DatabaseO;
        my $oErr = new XDrive::Error;

      ####
      ## Attempt to autenticate the user
      ####

        my $oToken = xd_security_check($oDBO, $oCGI, $oErr);

      ####
      ## If an error occurs or the user fails to autenticate then redirect
      ## to the error CGI and exit
      ####

      if ($oErr->Occurud)
            {
            xd_fatal_error($oCGI,$oErr);
            exit;
            }

      ####
      ## Otherwise have have autenticated the user and can proceed
      ####

      my $sUsername = $oToken->data('user');

      my $sPasswordNew        = $oCGI->param('txtPasswordNew1');
      my $sPasswordNewConfirm = $oCGI->param('txtPasswordNew2');
      my $sPasswordOld        = $oCGI->param('txtPasswordOld1');
```

```
      if (($sPasswordNew eq '') || ($sPasswordNewConfirm eq '') ||
($sPasswordOld eq ''))
            {
            ##if any of the fields is blank, give em error message
            my $sMessage = $oErr->ReturnMessageGivenCode(1340);
            XDErrorToBrowser("",$sMessage,undef,$oToken);
            }

      ## Change user's password
      PasswordSet($sUsername, $sPasswordNew,
$sPasswordOld,$oToken,$oErr,$oCGI);

      return 0;
      }

##############################################################################
## PasswordSet: Change user's password
##############################################################################

sub PasswordSet($$)
      {
      my $sUsername = shift;          ## (I) User in question
      my $sPassword = shift;          ## (I) New password
      my $sPasswordOld = shift;         ## (I) Old password
      my $oToken = shift;               ## (I) Token object
      my $oErr = shift;
      my $oCGI = shift;
      my $sPassEncrypted = XDEncrypt($sPassword);

      my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount->new();
      $oDiskAccount->loadWhere("USERNAME", $sUsername);

      if (! PasswordsMatch($oDiskAccount-
>fetchColumn("PASSWORD"),$sPasswordOld))
            {
            my $sMessage = $oErr->ReturnMessageGivenCode(1341);
            XDErrorToBrowser("",$sMessage,undef,$oToken);
            }

     if (! defined $oDiskAccount->fetchColumn("USER_SEQ"))
            {
            my $sMessage = $oErr->ReturnMessageGivenCode(1342);
            XDErrorToBrowser("",$sMessage,undef,$oToken);
            }

     $oDiskAccount->setColumn("PASSWORD", $sPassEncrypted);
       my $status = $oDiskAccount->update();

     ## If no error, then commit
     ## Else rollback and show an error
     if ($status > -1) {
         $oDiskAccount->commit();
     }
     else
     {
         $oDiskAccount->rollback();
           my $sMessage = $oErr->ReturnMessageGivenCode(1343);
           XDErrorToBrowser("",$sMessage,undef,$oToken);
     }

     $oDiskAccount->finish();
     $oDiskAccount->disconnect();
```


ISDOCID: <WO_____0133381A1_I_>

```
    my $oTemplate = new XDrive::Template( {'partner_code' => 'xdrv'} );
      $oTemplate->load('password_changed.thtml');
      print $oCGI->header(), $oTemplate->get;
    }

##############################################################################
## PasswordsMatch: Check an encrypted password against an unencrypted
## password and return true or false.
##############################################################################

sub PasswordsMatch
    {
    my $sEncrypted = shift;  ## current password
    my $sToCheck   = shift;  ## string to check

    ## Encrypt the passed password with the salt from the password taken
    ## from the database.
    my ($sSalt) = $sEncrypted =~ /^(\w{2})/;

    ## Do the passwords match?  If so then return true, otherwise false.
    if ($sEncrypted eq crypt($sToCheck,$sSalt))
            {
       return TRUE;
       }

      return FALSE;
    }
```


3NSDOCID: <WO_____0133381A1_I_>

###promo.cgi

```
#!/usr/bin/perl
##
## File: promo.cgi
##
## Written by Justin White on 10/25/99.
## Sets a promo cookie and redirects to the home page.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use XDrive::Template;
use XDrive::DatabaseO;
use XDrive::CGI::Cookie;
use XDrive::DatabaseO::Search;

use CGI;
use CGI::Carp qw(fatalsToBrowser);

&main();

exit;

sub main {
   my ($cookie, $promo, %new_info, $oSearch, $oTemplate);

   my $oCGI    = CGI->new();
   my $oCookie = XDrive::CGI::Cookie->new('x_session_info', $oCGI);

   my $path_info = $ENV{'PATH_INFO'};

   my $sClaimTicket = $oCGI->param('ct');

   if ($sClaimTicket) {
      ##
      # Via cookie, set the promo so that signup_account.cgi treats
      # it as a promo and set the claim ticket code so that we can
      # remove that data from the batch_user_data table.
      ##
      $oCookie->setElement( {'ct' => $sClaimTicket} );
   }

   if ($path_info) {
      $path_info =~ s/^\///;

      $oCookie->setElement( {'promo' => $path_info} );
      $oCookie->setPath('/');

      ##if user is coming from the befree promo, set a cookie with their
      ##source id, be Free requires this for tracking purposes
      if ($path_info =~ /befree/)
      {
            my $sourceid = $oCGI->param('sourceid');
            print "Set-Cookie: sourceid=$sourceid; domain=.xdrive.com;
path=/\n"
      }

      my $oDBO    = XDrive::DatabaseO->new();
      my $oSearch = XDrive::DatabaseO::Search->new($oDBO);
```

```
      my @bind_array = ($path_info);

      # my $st = "SELECT p.template, p.redirect_url, dl.code
      #           FROM xdrive.promo p, xdrive.v_language dl
      #           WHERE p.uri = '$path_info'
      #             AND p.du_language = dl.seq(+)";

      my $st = "SELECT p.template, p.redirect_url, dl.code
                FROM xdrive.promo p, xdrive.v_language dl
                WHERE p.uri = ?
            AND p.du_language = dl.seq(+)";

      # my $data = $oSearch->XDSQLSearch($st);
      my $data = $oSearch->XDSQLSearch($st, \@bind_array);
      my $rows = @{$data};

      if ($rows > 0) {
         my $template     = $$data[0][0];
         my $redirect_url = $$data[0][1];
         my $language     = $$data[0][3];

         $oCookie->setElement( {'language' => $language} );

         print "Set-Cookie: ", $oCookie->asString();

         if ($template) {
            eval {
               $oTemplate = new XDrive::Template( {'cookie'       =>
$oCookie,
                                                   'partner_code' => 'xdrv'}
);
               $oTemplate->partner('xdrv');

               $oTemplate->load("promo/$template");
            };

            if ($@) {
               print $oCGI->redirect('/');
               warn "$@\n";
            }
            else {
               print $oCGI->header(), $oTemplate->get;
            }

            $oSearch->disconnect;

         }
         elsif ($redirect_url) {
            print $oCGI->redirect($redirect_url);

            $oSearch->disconnect;
         }
         else {
            print $oCGI->redirect('/');

            $oSearch->disconnect;
         }
      }
      else {
         print $oCGI->redirect('/');
      }
   }
   else {
```


RNSDOCID: <WO 0133381A1 | >

```
        print $oCGI->redirect('/');

        $oSearch->disconnect;
    }

    return;
}
```


NSDOCID: <WO_____0133381A1_I_>

###removespace.cgi

```
#!/usr/bin/perl
##############################################################################3
##  Written by Karen Eppinger
##  removespace.cgi - cancels additional space requests
##############################################################################3

use lib ($ENV{PERL_XDRIVE_LIB});

use XDrive::Error;
use XDrive::Library;
use XDrive::DatabaseO;
use XDrive::DatabaseO::Table::Reseller;
use XDrive::DatabaseO::Table::Deal;
use XDrive::DatabaseO::Table::Item;
use XDrive::DatabaseO::Table::DiskAccount;
use XDrive::DatabaseO::Table::UserData;
use XDrive::DatabaseO::Table::UserPurchase;
use XDrive::Client::Actions;
use XDrive::DatabaseO::Search;
use XDrive::Sale::Purchase;
use Mail::Sendmail;
use CGI::Carp qw(fatalsToBrowser);
use CGI;
use XDrive::Template;
use XDrive::CGI qw(:MAIN);
use XDrive::Client::Security;
use EpochClient_ssl;

use strict;

$ENV{'PATH'} = '/bin';
delete @ENV{qw(IFS CDPATH ENV BASH_ENV)};    # Make %ENV safer

exit &main;

##############################################################################
## main: main function calls all others
##
##
##############################################################################


sub main
      {
        my $oCGI = CGI->new();
        my $oDBO = new XDrive::DatabaseO;
        my $oErr = new XDrive::Error;

      ####
      ## Attempt to authenticate the user
      ####

        my $oToken = xd_security_check($oDBO, $oCGI, $oErr);

      ####
      ## If an error occurs during autentication or authentication fails
      ## then redirect to the error CGI and exit
      ####
```

```
    if ($oErr->Occurud)
        {
        xd_fatal_error($oCGI,$oErr);
        exit;
        }

    ####
    ## Otherwise we have a valid session
    ####

    my $sUserName = $oToken->data('user');
    my $oTemplate = new XDrive::Template
        ({
            'partner_code' => $oToken->data('partner_code')
        });

    ## used to figure whether to give user the form or process the form
    my $sAction = $oCGI->param("action");

    ## Create a DBH
    my $oDBH = XDrive::DatabaseO->new();

    ## if the action is a request type
    if ($sAction eq 'process')
    {
        ##else we process the form input
        &CheckSpaceUsed($oCGI,$sUserName,$oTemplate,$oToken,$oDBH,$oErr);
    }
    elsif ($sAction eq 'intro')
    {
        &ShowIntroPage($oTemplate,$sUserName,$oToken,$oCGI);
    }
    else
    {
        ## we give the user the form
        &ShowSpace($sUserName,$oTemplate,$oToken,$oDBH,$oErr);
    }
    $oDBH->disconnect();
    }


##############################################################################
## CheckSpaceUsed:  make sure the user has enough free space for his files
## if not, do not let him cancel
##############################################################################

sub CheckSpaceUsed
{
    my $oCGI = shift;
    my $sUserName = shift;
    my $oTemplate = shift;
    my $oToken = shift;
    my $oDBH = shift;
    my $oErr = shift;

    ##we need to get the number of fields so we know what to process
    my @fields = $oCGI->param;
    my $checked = 0;

    my $returnValue = '';
    ##for each checked item, either cancel or tell user they may not cancel
    ##because space used is larger than space available after cancelation
```

```
        for (my $i=0; $i<$#fields; $i++)
        {
              if ($fields[$i]=~/^tc_/)
              {
              $fields[$i]=~s/^tc_//;
              my $oPurchase = new XDrive::Sale::Purchase($oDBH);
              my @message_dbmessage = $oPurchase->CancelItem($fields[$i],
 $sUserName);
              $returnValue .=$message_dbmessage[0];
              $checked++;

                    if ($message_dbmessage[1] != 0)
                    {
                          $oDBH->commit();
                    }
                    else
                    {
                          $oDBH->rollback();
                    }

              }
        }

        if ($checked>0)
        {
              ##show the page that tells user if space was cancelled or not
              &ShowCanceled($returnValue,$oTemplate);
        }
        else
        {
              ##user hasn't checked anything, give em error page
              my $sError = $oErr->ReturnMessageGivenCode(1301);
              XDErrorToBrowser("", $sError, undef, $oToken);
        }
}


###############################################################################
## ShowCanceled:  tell user space was cancelled
###############################################################################

sub ShowCanceled
      {
      my $sItemsCanceled = shift;
      my $oTemplate      = shift;

      ## Load the required template HTML files.
      $oTemplate->load('removespace_ok.thtml');
      $oTemplate->tags
            ({
            'items' => $sItemsCanceled
            });
      print "Content-type: text/html\n\n";
      print $oTemplate->get();
      }

###############################################################################
## ShowSpace:  shows the user the initial page with their current space
## allocation
###############################################################################

sub ShowSpace
{
```

```
        my $sUserName = shift;
        my $oTemplate = shift;
        my $oToken = shift;
        my $oDBH = shift;
        my $oErr = shift;

        my $sMessage = $oErr->ReturnMessageGivenCode(1302);
        $sMessage = &GetItems($sUserName,$oToken,$oDBH,$oErr);

        ## Load the required template HTML files.
        $oTemplate->load('removespace_request.thtml');
        $oTemplate->tags
                ({
                'items' => $sMessage
                });

        print "Content-type: text/html\n\n";
        print $oTemplate->get();
}

sub ShowIntroPage
{
        my $oTemplate = shift;
        my $sUserName = shift;
        my $oToken = shift;
        my $oCGI = shift;

        my $oAction = new XDrive::Client::Actions
                (
                $oToken,
                $oCGI
                );
        my $quotaUsed = $oAction->QuotaUsed();
        $quotaUsed = sprintf("%2.2f",$quotaUsed/1024);
        my $quotaLimit = $oAction->QuotaLimit();
        $quotaLimit = sprintf("%2.2f",$quotaLimit/1024);

        $oTemplate->load('removespace_intro.thtml');
        $oTemplate->tags
                ({
                'quotaUsed' => $quotaUsed,
                'quotaLimit' => $quotaLimit
                });
        $oTemplate->clear();

        print "Content-type: text/html\n\n";
        print $oTemplate->get();
}

sub GetItems
{
        my $sUserName = shift;
        my $oToken = shift;
        my $oDBH = shift;
        my $oErr = shift;

        my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount-
>new(undef,$oDBH);
        $oDiskAccount->loadWhere('USERNAME', $sUserName);

        ##now load all items in the user_purchase database that are
        ##owned by this user
        my $userSeq = $oDiskAccount->fetchColumn('USER_SEQ');
```

```
	##passing a 0 as the last parameter returns all non-canceled items
	my $oSearch = XDrive::DatabaseO::Search->new(undef);
	my $array = $oSearch->XDUserPurchases($userSeq,0);

	##see if the array returned any items

	if ($array->[0][0] eq '')
	{
		my $sError = $oErr->ReturnMessageGivenCode(1302);
		XDErrorToBrowser('removespace_noitems.thtml', $sError, 1,
$oToken);
	}

	my $i;
	my $items = '';

	for $i(0..$#{$array})
	{
		##storing the complete string returned by Epoch
		##must take only stuff after the | to cancel transaction
		##and chop off last character which seems to be a line return
		##may have to alter this if we see problems
		chop($array->[$i][4]);
		my @aCodes=split(/\|/, $array->[$i][4]);
		my $itemName = 'tc_' . $aCodes[1];
		$itemName=~s/~//;

		##Get the name associated with this item
		my $oDeal = XDrive::DatabaseO::Table::Deal->new(undef,$oDBH);
		$oDeal->loadWhere('SEQ',$array->[$i][2]);
		my $itemSeq = $oDeal->fetchColumn('ITEM_SEQ');
		my $oItem = XDrive::DatabaseO::Table::Item->new(undef,$oDBH);
		$oItem->loadWhere('SEQ', $itemSeq);
		my $description = $oItem->fetchColumn('DESCRIPTION');

		$items .= '<input type="checkbox" name="' . $itemName . '">' .
$description . '<BR>';
	}

	if ($items eq '')
	{
		my $sError = $oErr->ReturnMessageGivenCode(1302);
		XDErrorToBrowser('removespace_noitems.thtml', $sError, 1,
$oToken);
	}

	return $items;
}
```

###selected_delete.cgi

```
#!/usr/bin/perl
# Written by Martin Hald <mhald@geotribe.com> for renaming files from the
# web.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use CGI::Carp qw(fatalsToBrowser);
use XDrive::CGI qw(:MAIN);
use XDrive::Client::Actions;
use XDrive::Client::Security;

use XDrive::Error;
use XDrive::DatabaseO;

exit &main;

sub main
      {
      my $oCGI = new CGI;
      my $oErr = new XDrive::Error;
      my $oDBO = new XDrive::DatabaseO;

      ####
      ## Attempt to autenticate the user
      ####

      my $oToken = xd_security_check($oDBO,$oCGI,$oErr);

      ####
      ## If an error occured or the user could not be validated then
      ## redirect to the error CGI and exit
      ####

      if ($oErr->Occurud)
            {
            xd_fatal_error($oCGI,$oErr);
            exit;
            }

      ####
      ## Otherwise we know that we have a valid session
      ####

      my $oAction = new XDrive::Client::Actions
            (
            $oToken,
            $oCGI
            );

      $oAction->FileCheck($oAction->ItemCurrent());
      $oAction->ItemDelete($oAction->ItemCurrent());
      xd_web_buttonindex($oCGI);
      $oAction->DisconnectDB();

      return 0;
      }
```

###selected_rename.cgi

```
#!/usr/bin/perl
# Written by Martin Hald <mhald@geotribe.com> for renaming files from the
# web.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use CGI::Carp 'fatalsToBrowser';
use XDrive::CGI qw(:MAIN);
use XDrive::Client::Actions;
use XDrive::Client::Security;

use XDrive::Library;
use XDrive::DatabaseO;
use XDrive::Error;

## Clean up the path
$ENV{'PATH'} = '/bin';
delete @ENV{qw(IFS CDPATH ENV BASH_ENV)};   # Make %ENV safer

exit &main;

sub main {
        my $oCGI = new CGI;
        my $oErr = new XDrive::Error;
        my $oDBO = new XDrive::DatabaseO;

      ####
      ## Attempt to autenticate the user
      ####

      my $oToken = xd_security_check($oDBO,$oCGI,$oErr);

      ####
      ## If the autentication fails or there is an error during the
      ## autentication phase then redirect to the error CGI
      ####

      if ($oErr->Occurud)
            {
            xd_fatal_error($oCGI,$oErr);
            exit;
            }

      ####
      ## Otherwise we have a valid session
      ####

        my $oAction = new XDrive::Client::Actions
            (
            $oToken,
            $oCGI
                );

        my $sItemOld = $oAction->ItemCurrent();

        ## Get the relative path to the item to be renamed from the
        ## old item name itself.
```

```
        my ($sFolder) = $sItemOld =~ /(.+\/)[^\/]+/;

        ## Set the new item to be in that folder.
        my $sItemNew = $sFolder.$oAction->ItemNew().$oAction-
>ItemExtension();

      $oAction->FileCheck($sItemOld);
        $oAction->ItemRename($sItemOld,$sItemNew);

        xd_web_buttonindex($oCGI);
        $oAction->DisconnectDB();
}
```

###settings_save.cgi

```
#!/usr/bin/perl

use strict;
use vars qw(@ISA);
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use CGI::Carp qw(fatalsToBrowser);
use Data::Dumper;
use XDrive::Library;
use XDrive::CGI;
use XDrive::Client::Quota;
use XDrive::Client::Security;
use XDrive::CGI::Cookie;
use XDrive::DatabaseO::Table::UserSettings;
use XDrive::DatabaseO::Table::Language;
use XDrive::DatabaseO;
use XDrive::Error;
use XDrive::Template;

@ISA = qw(XDrive::CGI);

exit &main;

sub main {
        my $oCGI = CGI->new();
        my $oDBO = new XDrive::DatabaseO;
        my $oErr = new XDrive::Error;

        ####
        ## Attempt to autenticate the user
        ####

        my $oToken = xd_security_check($oDBO,$oCGI,$oErr);

        ####
        ## If the autentication fails or there is an error during the
        ## autentication phase then redirect to the error CGI
        ####

        if ($oErr->Occurud)
                {
                xd_fatal_error($oCGI,$oErr);
                exit;
                }

        ####
        ## Otherwise we have a valid session
        ####

     my $oCookie = XDrive::CGI::Cookie->new('x_session_info', $oCGI);
     my $sUser = $oToken->data('user');
     my $nUser = UserIdGet($sUser);

     my $oUserSettings = XDrive::DatabaseO::Table::UserSettings->new(undef,
undef);

     ## Initialize global variables
     my $g_bFileExtEdit = $oCGI->param('bFileExtEdit') eq 'on' ? 1 : 0;
```


BNSDOCID: <WO 01333981A1 >

```
my $g_bExtraHelp    = $oCGI->param('bExtraHelp') eq 'on' ? 1 : 0;
my $g_bMarketing    = $oCGI->param('bMarketing') eq 'on' ? 1 : 0;
my $g_bNewsletter   = $oCGI->param('bNewsletter') eq 'on' ? 1 : 0;
my $g_bLanguage     = $oCGI->param('bLanguage');
my $sCurrentLanguage;

my $languageCode;

if (defined $g_bLanguage)
      {
      my $oLanguage = XDrive::DatabaseO::Table::Language->new
            (undef, $oUserSettings->fetchDBO());
      $oLanguage->loadWhere("CODE", $g_bLanguage);
      $languageCode = $oLanguage->fetchColumn("SEQ");
      }

## We are doing this in a backwards way -- first we will try and load
the
## current users profile.  If that works then we change it and update
it
## by calling save.  If that does not work then we just call save.

$oUserSettings->loadWhere("USER_SEQ", $nUser);
$oUserSettings->setColumn("FILE_EXT_EDITABLE", $g_bFileExtEdit);
$oUserSettings->setColumn("EXTRA_HELP", $g_bExtraHelp);
$oUserSettings->setColumn("OPT_MARKETING", $g_bMarketing);
$oUserSettings->setColumn("OPT_NEWSLETTER", $g_bNewsletter);

## The language element is an OPTIONAL setting in the "My Profile"
area.
## If it is passed then set it, otherwise leave the current value.
if (defined $g_bLanguage)
{
    $sCurrentLanguage = $g_bLanguage;
    $oUserSettings->setColumn("LANGUAGE", $languageCode);
}
  else
{
    $sCurrentLanguage = "english";
}

my $status = $oUserSettings->update();

if ($status < 0)
{
    $oUserSettings->rollback();
      my $sMessage = $oErr->ReturnMessageGivenCode(1330);
    XDErrorToBrowser(undef, $sMessage, undef, $oToken)
}
else
{
      $oUserSettings->commit();

      if (defined $g_bLanguage)
            {
            ##set the cookie for language
            $oCookie->setElement
                  ({
                  'language' => $g_bLanguage
                  });
            print "Set-Cookie: ", $oCookie->asString();
            }
}
```

```
    ## Redirect the browser to the succesfull save page.

    ### Edited by Justin so that we get the partner_code out
    ### of cookie instead of the token table.
    # print xd_web_redirect
    #     (
    #     "/account/profile/$sCurrentLanguage/saved.html",
    #     $oToken->data('partner_code')
    #     );

    print xd_web_redirect
            (
            "/account/profile/$sCurrentLanguage/saved.html",
            $oCookie->getElement('partner')
            );

    $oUserSettings->finish();
    $oUserSettings->disconnect();
    $oDBO->disconnect();
}
```


3NSDOCID: <WO 013338141 >

###share_a_file.cgi

```
#!/usr/bin/perl

use lib ($ENV{PERL_XDRIVE_LIB});

use XDrive::Client::Quota;
use Math::TrulyRandom;
use XDrive::DatabaseO;
use XDrive::DatabaseO::Search;
use XDrive::DatabaseO::Transaction;
use XDrive::DatabaseO::Table::UserData;
use XDrive::Utils::RandomString;
use XDrive::CGI;

use Mail::Sendmail;
use CGI::Carp qw(fatalsToBrowser);
use CGI;
use XDrive::Template;
use XDrive::Client::Security;
use XDrive::Error;
use XDrive::Library;
use XDrive::CGI::Cookie;

use strict;

&main();

sub main {
      my $cgi = CGI->new();
      my $oErr = new XDrive::Error;
      my $xdDBH = XDrive::DatabaseO->new();

      my $oCookie = new XDrive::CGI::Cookie('x_session_info', $cgi);

        ####
        ## Attempt to autenticate the user
        ####

      my $oToken = xd_security_check($xdDBH,$cgi,$oErr);

        ####
        ## If the autentication fails or there is an error during the
        ## autentication phase then redirect to the error CGI
        ####

        if ($oErr->Occurud) {
              xd_fatal_error($cgi,$oErr);
            $xdDBH->disconnect();
              exit;
      }

        ####
        ## Otherwise we have a valid session
        ####

      ### Edited by Justin so that the partner_code is looked for
      ### in the cookie instead of the token table.
      # my $sPartner = $oToken->data('partner_code');
      my $sPartner = $oCookie->getElement('partner');
      my $nUser_ID = UserIdGet($oToken->data('user'));
```

```
        ## Grab the user info from the Database
        my $oUserInfo = XDrive::DatabaseO::Table::UserData->new({}, $xdDBH);

        my $sFileName = $cgi->param("sFileName");
        my $bHelp = $cgi->param("help");

        my $sFriendsEmail = &get_friends_emails($cgi);
        my $sEmailSubject = $cgi->param('sEmailSubject');
        my $sEmailMessage = $cgi->param("sEmailMessage");
        my $sFileDescription = $cgi->param("sFileDescription");

        my ($sRandomKey, $sFilePath);

        ## Load user info where the SEQ = $nUser_ID
        $oUserInfo->loadWhere("SEQ", $nUser_ID);

        my $sUser_name = $oUserInfo->fetchColumn("NAME_FIRST") . " " .
$oUserInfo->fetchColumn("NAME_LAST");
        my $sUser_email = $oUserInfo->fetchColumn("EMAIL_ADDRESS");

        if ($sFriendsEmail)
            {

              $sFilePath="/";
              $sFileName =~ m%(.*)/(.*)%;

              #inserted this code to catch documents that are not in a folder

              my $tempFilePath = "/" . $1;
              my $tempFileName = $2;

              if ($tempFileName ne "")
                    {
                    $sFileName=$tempFileName;
                    $sFilePath=$tempFilePath;
                    }

              &verify_database_values($nUser_ID, $sFileName, $sFilePath,
                                      $sFilePath, $sFileName,
$sFileDescription,$oToken,$oErr);

              ## Insert the info into the disk_item_share table, and get the
random key
              $sRandomKey = &insert_file_into_database($nUser_ID, $sFileName,
$sFilePath, $sFileDescription, $xdDBH,$oToken,$oErr);

&send_mail($sFriendsEmail, $sEmailSubject, $sEmailMessage, $sFileDescription,
$sUser_name, $sUser_email, $nUser_ID,
$sRandomKey,$sPartner,$oToken,$oErr,$cgi);

                &display_thank_you($sPartner);

            }
              else {
              $oUserInfo->finish();
              $xdDBH->disconnect();
                &display_form($sFileName, $bHelp, $sPartner);
            }

        $oUserInfo->finish();
        $oUserInfo->disconnect();
}
```


BNSDOCID: <WO 0133381A1 | >

```
sub send_mail {
    my ($sFriendsEmail, $sEmailSubject, $sEmailMessage, $sFileDescription,
$sUser_name, $sUser_email, $nUser_ID, $sRandomKey,
$sPartner,$oToken,$oErr,$oCGI) = @_;

      ##get language from the cookie.  If not english, append language code
to url
      my $oCookie = new XDrive::CGI::Cookie('x_session_info', $oCGI);
      my $language = $oCookie->getElement('language');
      if ($language ne 'english')
      {
            if ($language eq 'spanish')
            {
                  $sRandomKey .= "-SP";
            }
      }

    $sEmailMessage = &get_message($sEmailMessage,
$sRandomKey,$sPartner,$nUser_ID);

    my %toXdrive =
          (
          To      => "$sFriendsEmail",
          From    => "$sUser_name.<$sUser_email>",
          Message => $sEmailMessage,
          Subject => "$sEmailSubject",
          );

    unless (sendmail %toXdrive)
          {
            warn "## Mail error ".$Mail::Sendmail::error;
            if ($Mail::Sendmail::error =~ /451/)
                  {
                  my $sMessage = $oErr->ReturnMessageGivenCode(1310);
                  XDErrorToBrowser("",$sMessage,undef,$oToken);
                  }
            else
                  {
                  my $sMessage = $oErr->ReturnMessageGivenCode(1311);
                  XDErrorToBrowser("",$sMessage,undef,$oToken);
                  }
            exit(1);
            }
}

sub get_message {
    my ($sEmailMessage, $sRandomKey,$sPartner,$n_UserID) = @_;

    my $oMessage = new XDrive::Template;
    $oMessage->partner($sPartner);
    $oMessage->load('share_a_file__message.thtml');

    $oMessage->tags
        ({
        'Message' => $sEmailMessage,
      'RandomKey' =>$sRandomKey,
        'nUser_ID' =>$n_UserID,
      'sender' =>$ENV{'HTTP_HOST'},
        });

   return $oMessage->get;
```


NSDOCID: <WO_____0133381A1_I_>

```
}

sub display_form {
    my ($sFileName, $bHelp,$sPartner) = @_;
    my $oForm = new XDrive::Template;
    $oForm->partner($sPartner);
    $oForm->load('share_a_file.thtml');

    my $sHelp='';

    if ($bHelp eq 'true')
    {
    my $oHelp = new XDrive::Template;
    $oHelp->partner($sPartner);
    $oHelp->load('share_a_file_help.thtml');
    $sHelp = $oHelp->get;
    }

    $oForm->tags
        ({
        'sFileName' => $sFileName,
      'helptext' => $sHelp
        });

    print header, $oForm->get;
    exit(0);
}

sub display_thank_you {
    my $sPartner = shift;
    my $oForm = new XDrive::Template;
    $oForm->partner($sPartner);
    $oForm->load('share_a_file__t_y.thtml');
    print header, $oForm->get;
    exit(0);
}

sub verify_database_values {
    my ($nUser_ID, $sFileName, $sFilePath, $sFilePath, $sFileName,
$sDescription,$oToken,$oErr) = @_;

    if (length($sDescription) > 255) {
      my $sMessage = $oErr->ReturnMessageGivenCode(1320);
      XDErrorToBrowser("",$sMessage,undef,$oToken);
    }

    if (length($sFilePath) > 255) {
      my $sMessage = $oErr->ReturnMessageGivenCode(1321);
      XDErrorToBrowser("",$sMessage,undef,$oToken);
    }

    if (length($sFileName) > 255) {
      my $sMessage = $oErr->ReturnMessageGivenCode(1322);
      XDErrorToBrowser("",$sMessage,undef,$oToken);
    }

}


sub insert_file_into_database {
    my ($nUser_ID, $sFileName, $sFilePath, $sFileDescription,
$xdDBH,$oToken,$oErr) = @_;
```


RNSDOCID: <WO 0133381A1_I_>

```
    my @characters = ('a'..'z','A'..'Z','0'..'9');

    ##seed random number generator
    srand(truly_random_value());
    my $gmTime = time;
    ##grab length of time
    my $randLen = 32 - length($gmTime);
    my $sRandomKey = XDRandomString($randLen,\@characters);
    ##now we have a Random key
    $sRandomKey = $gmTime . $sRandomKey;
    ##  at this point we have a random number
    ##  of length gmTime with the current gmt time appended to it


    my $transaction = XDrive::DatabaseO::Transaction->new($xdDBH);
    my $status = $transaction->insertDiskItemShare($nUser_ID, $sRandomKey,
$sFilePath, $sFileName, $sFileDescription);

    if ($status < 0)
    {
      $transaction->rollback();
      my $sMessage = $oErr->ReturnMessageGivenCode(1323);
      XDErrorToBrowser("",$sMessage,undef,$oToken);
      exit(1);

    }
    else
    {
      $transaction->commit();
    }

    return $sRandomKey;
}

sub get_friends_emails {
    my $cgi = shift;
    my ($email_list, @email_array);

    if (length $cgi->param('sFriendsEmail0') > 0)
      {
      push(@email_array, $cgi->param('sFriendsEmail0'));
      }

    if (length $cgi->param('sFriendsEmail0') > 0)
      {
      push(@email_array, $cgi->param('sFriendsEmail1'));
      }

    if (length $cgi->param('sFriendsEmail0') > 0)
      {
      push(@email_array, $cgi->param('sFriendsEmail2'));
      }

    if (length $cgi->param('sFriendsEmail0') > 0)
      {
      push(@email_array, $cgi->param('sFriendsEmail3'));
      }

    if (length $cgi->param('sFriendsEmail0') > 0)
      {
      push(@email_array, $cgi->param('sFriendsEmail4'));
      }
```


ISDOCID: <WO_____0133381A1_I_>

```
    $email_list = join(",", @email_array);

    return $email_list;
}
```


BNSDOCID: <WO 0133381A1 I >

###signup_account.cgi

```
#!/usr/bin/perl
## -d:DProf
## -d:SmallProf
## Written by Martin Hald <mhald@uci.edu> on Wed Apr 7 1999.  This program
## adds new users to the database.
## Modified by Justin White for cookie referee and promo stuff and to make
## mod_perl friendly and to work with changes to the Security module and
## to get rid of the XDrive::CGI module and to create a CGI object.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use CGI::Carp qw(fatalsToBrowser);
use XDrive::Client::Registration;
use XDrive::Error;
use XDrive::Client::Security;
use XDrive::Template;
use XDrive::DatabaseO::Table::UserData;
use XDrive::DatabaseO::Transaction;
use XDrive::DatabaseO::Table::UserQuota;
use XDrive::DatabaseO::Table::Promo;
use XDrive::DatabaseO::Table::DiskAccount;
use XDrive::DatabaseO::Table::Reseller;
use XDrive::Template;
use XDrive::DatabaseO::Search;
use XDrive::CGI::Cookie;
use XDrive::Library;
use Mail::Sendmail;
use CGI qw(param redirect header cookie);

BEGIN
{
      push(@INC, "/export/home/www/thirdparty/mint2/perl");
}

use Mint2;

&main;

exit;

sub main {
      my $oCGI     = new CGI;
        my $oCookie = XDrive::CGI::Cookie->new('x_session_info', $oCGI);
        my $oSTDCookie = XDrive::CGI::Cookie->new('xd_std_info', $oCGI);

      my $file_found;

      ### Use the new XDrive::CGI::Cookie now.
      my $promo_uri      = $oCookie->getElement('promo');
      my $ref_seq_cookie = $oCookie->getElement('referee');
      my $referred_from  = $oCookie->getElement('refered_from');
      my $claim_ticket   = $oCookie->getElement('ct');

      my $ref_seq_param     = $oCGI->param('referee');
      my $password          = $oCGI->param('password');
      my $password_confirm = $oCGI->param('password_confirm');
      my $birth_year        = $oCGI->param('birth_year');
```

```
my $username          = $oCGI->param('username');
my $name_first        = $oCGI->param('name_first');
my $name_last         = $oCGI->param('name_last');
my $email_address     = $oCGI->param('email_address');
my $country_seq       = $oCGI->param('country');
my $gender_seq        = $oCGI->param('gender');
my $postal_code       = $oCGI->param('zip2');
my $occupation_seq    = $oCGI->param('occupation');
my $referee           = $oCGI->param('referee');
my $marketing         = $oCGI->param('marketing');
my $newsletter        = $oCGI->param('newsletter');
my $media_type_seq    = $oCGI->param('media_type');


## PARAMS TO GATHER IF THIS IS CALLED FROM SKIP
## THE DOWNLOAD
my $sSTDPartner = $oSTDCookie->getElement('STDPARTNER');
my $sLanguage   = $oSTDCookie->getElement('LANG');
my $sFileURL    = $oSTDCookie->getElement('FILEURL');
my $sFileName   = $oSTDCookie->getElement('FILENAME');
my $sAltURL     = $oSTDCookie->getElement('ALTURL');
my $sCatId      = $oSTDCookie->getElement('CATID');
my $sGid        = $oSTDCookie->getElement('GID');
my $sSid        = $oSTDCookie->getElement('SID');


 ## check if database is up
 my $oDBO;
 my $oSearch;
 if (XDDBConnectionCheck() && XDNFSCheck())
 {
    ## connection good proceed normally
  $oDBO    = new XDrive::DatabaseO(undef);
    $oSearch = XDrive::DatabaseO::Search->new($oDBO);
 }
 else
 {
    ## connection bad write data to a temp file and load
    ## upgrading page telling them that they will be
    ## informed once X:drive is up
    $oDBO    = undef;
    $oSearch = undef;
    my $tempVar;

    my $tempEmail = $oCGI->param('friends_emaill1');
    my $numFriends = $oCGI->param('numFriends');


    my $addrArray  = $tempEmail;
    my $nameArray  = $oCGI->param('friends_name1');

    ## generate list for the javascript array
    for (my $i = 2;$i <= $numFriends;$i++)
    {
      $tempVar = $oCGI->param('friends_email' . $i);

      if ($tempVar)
      {
        $addrArray .= "~" . $tempVar;
        $nameArray .= "~" . $oCGI->param('friends_name' . $i);
      }
    }
```

```
            reg_while_down (
                        $promo_uri,
                        $ref_seq_cookie,
                        $referred_from,
                        $claim_ticket,
                        $ref_seq_param,
                        $password,
                        $birth_year,
                        $username,
                        $name_first,
                        $name_last,
                        $email_address,
                        $country_seq,
                        $gender_seq,
                        $postal_code,
                        $occupation_seq,
                        $referee,
                        $marketing,
                        $newsletter,
                        $media_type_seq,
                          $nameArray,
                          $addrArray
                          );

            ## leave and show upgrading page test me
            print redirect("/upgrading_signup_success.html");
            exit;
          }

        ##my $oDBO    = new XDrive::DatabaseO(undef);
        ##my $oSearch = XDrive::DatabaseO::Search->new($oDBO);

        ######
        ### If media_type_seq equals 'notset', then set it to NULL.
        ######
        $media_type_seq = '' if $media_type_seq eq 'notset';

        my $partner_code = 'xdrv';
        my $partner_seq  = 1;

        my $promo_seq;

        ######
        ### Check to see how the referee sequence, if any, was passed in.
        ### If it was passed in via cookie, then use that.  Else, assume
        ### that it is a form parameter.
        ######
        my $ref_seq = $ref_seq_cookie ? $ref_seq_cookie : $ref_seq_param;

        ######
        ### If we were passed a promo uri, then let's get the promo seq
        ### from promo table using Promo.pm to pass to xd_client_register.
        ######
        if ($promo_uri) {
              my $oPromoInfo = XDrive::DatabaseO::Table::Promo-
>new(undef,$oDBO);
              $oPromoInfo->loadWhere('URI', $promo_uri);
              $promo_seq = $oPromoInfo->fetchColumn('SEQ');

              $oPromoInfo->finish();
        }

        ######
```

```
	### Load the required template HTML files.  The content that we load
depends
	### on if the new registration went through or if we need to have them
re-fill
	### the form.
	######
	  my $oContent    = new XDrive::Template( {'partner_code' => 'xdrv'} );
	  my $oLayout     = new XDrive::Template( {'partner_code' => 'xdrv'} );
	  my $oNavigation = new XDrive::Template( {'partner_code' => 'xdrv'} );

	my $oErr = new XDrive::Error;

	$oContent->load('front_signup.thtml');
	$oNavigation->load('front_nav.thtml');
	$oLayout->load('layout.thtml');

	######
	### Perform data validation
	######
	if ($password ne $password_confirm) {
		$oErr->AddErrorByErrorCode(709);
	}


	######
	### Attempt to register the user if no errors have been logged
	######
	if (! $oErr->Occurud ) {
		xd_client_register( {'birth_year'     => $birth_year,
				     'partner_seq'    => $partner_seq,
				     'username'       => $username,
				     'password'       => XDEncrypt($password),
				     'name_first'     => $name_first,
				     'name_last'      => $name_last,
				     'email_address'  => $email_address,
				     'country_seq'    => $country_seq,
				     'gender'         => $gender_seq,
				     'postal_code'    => $postal_code,
				     'occupation_seq' => $occupation_seq,
				     'referee'        => $ref_seq,
				     'marketing'      => $marketing,
				     'newsletter'     => $newsletter,
				     'partner_code'   => $partner_code,
					'promo_seq'      => $promo_seq,
					'media_type_seq' => $media_type_seq},
$oCGI, $oErr, $oDBO );
	}

	if ($oErr->MaxIndex() < 0) {
		## No errors occured, the user has already been added to the
		## database through the xd_client_register subroutine so now
		## send the user an email and then
		## log the user and go to the user's homepage.

		client_email_send($username,
				  $name_first,
				  $name_last,
				  $email_address,
				  'X\:drive Team <team@xdrive.com>',
				  'Welcome to X:drive! - Important Account
Information',
				  $partner_code,
				  $promo_seq);
```

```
            ######
        ### If we have a claim ticket, then remove that ticket
        ### from the batch_user_data table because the user has
        ### been added and we don't need that data anymore.
            ######
        if ($claim_ticket) {
            my $oTransaction = XDrive::DatabaseO::Transaction-
>new($oDBO);

           my $rv = $oTransaction->removeClaimTicket($claim_ticket);

            if ($rv == 1) {
               $oTransaction->commit();
            }
            else {
               $oTransaction->rollback();
            }
        }

        ##if we have a referee seq, give the referee additional space

        if ($ref_seq >= 1) {

            ## johngaa add to exclude college club and quepasa users
out
            my $oUserData = XDrive::DatabaseO::Table::UserData-
>new(undef,$oDBO);
            $oUserData->loadWhere("SEQ", $ref_seq);
            my $reseller_seq = $oUserData-
>fetchColumn("RESELLER_SEQ");
            if (!(isResellerSeqCC_QUPA($oDBO,$reseller_seq)))
            {

               ## end of johngaa

           my $oUserQuota = XDrive::DatabaseO::Table::UserQuota-
>new(undef, $oDBO);
           $oUserQuota->loadWhere("USER_SEQ", $ref_seq);
           my $additional_quota = $oUserQuota-
>incrementQuota($ref_seq, 5120);

           if ($additional_quota > 0) {

&send_email_referee($ref_seq,$oDBO,$oCookie,$additional_quota,$referred_from)
;
           }

           $oUserQuota->finish();
            }

        }

        ##if the user is from Cybergold, process through Cybergold
        if ($promo_uri=~/cybergold/) {
           my ($code, %res) =
&contact_cybergold($oCGI,$username,$email_address);
        }

        ##if user is coming from the befree promo
        ##write to file that they've signed up
        if ($promo_uri =~ /befree/) {
            &write_befree_log($oCGI);
```


BNSDOCID: <WO 013338141 >

```
            }

            if ($sFileURL eq '') {

                client_login($username, $oCGI);

            } else {

                std_login($username,
                        $oCGI,
                        $sSTDPartner,
                        $sLanguage,
                        $sFileURL,
                        $sFileName,
                        $sAltURL,
                        $sCatId,
                        $sGid,
                        $sSid);
            }

            $oSearch->disconnect();

            exit;
      }
      else {
            ## Reload the signup form, show the errors and pre-fill all
            ## the form elements except the password.

            ##if we are overriding standard registration form
                ##load it here

                if ($promo_uri)
                {
                        $file_found = $oContent->load($promo_uri .
'_registration.thtml');
                  if (!$file_found)
                  {
                        $file_found = $oContent-
>load('promo_registration.thtml');
                  }
                }

                if ((!$promo_uri) || (!$file_found))
                {
                        $oLayout->load("layout.thtml");
                        $oNavigation->load("front_nav.thtml");
                        $oContent->load("front_signup.thtml");
                }

            my ($select_marketing, $select_newsletter);

            my $checked = "CHECKED";

            if ($marketing eq 'on') {
                  $select_marketing = $checked;
            }

            if ($newsletter eq 'on') {
                  $select_newsletter = $checked;
            }

            ## IMPORTANT ##
            ## make sure to put all non text fields at the top of
```


BNSDOCID: <WO_____0133381A1_I_>

```
                ## the tags function or it will gag

            ## Search and replace the following tags
            $oContent->tags( {'country'           =>
xd_form_countries($country_seq, $oSearch),
                              'occupation'        =>
xd_form_occupation($occupation_seq, $oSearch),
                                 'media_type'         =>
xd_form_media_type($media_type_seq, $oSearch),
                                 'gender'             =>
xd_form_gender($gender_seq, $oSearch),
                              'select_marketing'  => $select_marketing,
                              'select_newsletter' => $select_newsletter,
                              'errors'            => format_errors($oErr),
                              'username'          => $username,
                              'name_first'        => $name_first,
                              'name_last'         => $name_last,,
                              'email_address'     => $email_address,
                              'birth_year'        => $birth_year,
                              'postal_code'       => $postal_code} );

                ##
                ## Added to have tell a friend support in registration
                ##

                my (@addrArray, @nameArray, $tempIndex, $tempName,
$tempEmail, $tempNum);

                ## tell a friend data will be coming in to signup_form
                ## seperated by commas

                @addrArray = split /,/,$oCGI->param('friends_email_array');
                @nameArray = split /,/,$oCGI->param('friends_name_array');

                $tempNum = $oCGI->param('numFriends');

                for (my $tempIndex=1;$tempIndex <= $tempNum;$tempIndex++) {
                   $tempName  = 'friends_name' . $tempIndex;
                   $tempEmail = 'friends_email' . $tempIndex;

                   $oContent->tags( {$tempName  => $oCGI->param($tempName),
                                     $tempEmail => $oCGI->param($tempEmail)}
);

                }

            ## Clear the content of any unused tags.
            $oContent->clear;
      }

      ##if we are loading a non-standard registration, it's only one page
        if (($promo_uri) && ($file_found))
        {
              print $oCGI->header(), $oContent->get;
        }
        else
        {
            ## Print out the HTML and exit
            $oLayout->tags( {'header_graphic' => 'header_registration.gif',
                     'title'          => 'Register Now!',
                     'content'        => $oContent->get,
                     'navigation'     => $oNavigation->get} );
```


3NSDOCID: <WO_____0133381A1_I_>

```
            print $oCGI->header(), $oLayout->get;
        }

        $oSearch->disconnect();

        return 0;
}


sub isResellerSeqCC_QUPA
{
    my $oDBO = shift;
    my $reseller_seq = shift;
    my $dbh = $oDBO->fetchDBH();

    my $sql_stmt = "SELECT code FROM reseller WHERE seq=?";
    my $cmd;
    my @data;

    $cmd = $dbh->prepare($sql_stmt);
    $cmd->execute(($reseller_seq));
    @data = $cmd->fetchrow_array;
    if ($data[0] eq 'cc' || $data[0] eq 'qupa')
    {
        return 1;
        ##print "should return  a true\n"
    }
    return 0;
}



################################################################################
## reg_while_down:  Grabs all data that is needed to register a user
## routine will add the data to a file in the tmp directory of the name
## reg_while_down.datetime
################################################################################
sub reg_while_down
{
    my ($promo_uri,$ref_seq_cookie,$referred_from,$claim_ticket,
        $ref_seq_param,$password,$birth_year,$username,$name_first,
        $name_last,$email_address,$country_seq,$gender_seq,$postal_code,
        $occupation_seq,$referee,$marketing,$newsletter,$media_type_seq,
        $tell_a_friend_name,$tell_a_friend_addr) = @_;

    my $filename = XDGetRegDatFile();
    open OUTFILE, ">>$filename";

    print OUTFILE "$promo_uri,$ref_seq_cookie,$referred_from,";
    print OUTFILE "$claim_ticket,$ref_seq_param,$password,";
    print OUTFILE "$birth_year,$username,$name_first,";
    print OUTFILE "$name_last,$email_address,$country_seq,";
    print OUTFILE "$gender_seq,$postal_code,$occupation_seq,";
    print OUTFILE "$referee,$marketing,$newsletter,$media_type_seq,";
    print OUTFILE "$tell_a_friend_name,$tell_a_friend_addr\n";
    close OUTFILE;
}

################################################################################
## format_errors:  Accept an error object and return an ordered list of
## errors in HTML format.
################################################################################
```


3NSDOCID: <WO 01333814A1 >

```
sub format_errors {
      my $oErr = shift; ## (I) errors

      my $txt;       ## formated HTML
      my $bPassword; ## has a password error been found?

      $txt .= "<ol>\n";

      my $nNumErrors = $oErr->MaxIndex();

      for (my $i = 0;$i <= $nNumErrors;$i++) {
            my $error = $oErr->Message();

            if ($error =~ /assword/) {
                  $bPassword = 1;
            }

            $txt .= "<li><font color=RED>$error</font>\n";
      }

      if (! $bPassword) {
            $txt .= "<li><font color=RED>Please re-enter your
password</font>\n";
      }

      $txt .= "</ol>\n";

      return $txt;
}

##############################################################################
## client_login:  Create the needed token to identify the client and redirect
## them to thier new homepage.
##############################################################################

sub client_login ($$) {
        ## No errors occured, add the user to the parter/user->real
        ## user mapping and return a success code.

      my $username = shift;
      my $oCGI     = shift;

      my $oDBO    = new XDrive::DatabaseO(undef);
        my $oCookie = XDrive::CGI::Cookie->new('x_session_info', $oCGI);

      ######
      ### Check the x_session_info cookie for promo or referee and
      ### if they exist, delete those hash elements and reset the cookie.
      ######

      my $promo_cookie = $oCookie->getElement('promo');
      my $ref_cookie   = $oCookie->getElement('referee');

        if ($ref_cookie || $promo_cookie) {
            $oCookie->deleteElement('referee') if $ref_cookie;
            $oCookie->deleteElement('promo')   if $promo_cookie;

            print "Set-Cookie: ", $oCookie->asString();
        }

      my $oError = new XDrive::Error;
      my $oToken = xd_login($oCGI, $username, $oError, $oDBO);
```

```
      ## we need to do all of this to get the reseller code to show the
correct page
      my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount->new(undef,
$oDBO);

        $oDiskAccount->loadWhere("USERNAME", $username);

        my $oUser = XDrive::DatabaseO::Table::UserData->new(undef,
$oDiskAccount->fetchDBO);

        $oUser->loadWherePK($oDiskAccount->fetchColumn("USER_SEQ"));

        my $oReseller = XDrive::DatabaseO::Table::Reseller->new(undef,
$oDiskAccount->fetchDBO);

        $oReseller->loadWherePK($oUser->fetchColumn("RESELLER_SEQ"));

      my $oTemplate = new XDrive::Template;

        $oTemplate->partner($oReseller->fetchColumn("CODE"));

        ##  originally this is where the signup_form.cgi goes
      ##$oTemplate->load('splash.thtml');
      $oTemplate->load('tell_a_friend_frame.thtml');

        ##my $addrArray  = $oCGI->param('friends_email_array');
        ##my $nameArray  = $oCGI->param('friends_name_array');
        ##my $numFriends = $oCGI->param('numFriends');

        ## generate list for the javascript array
        ##my @addrList = split /,/, $addrArray;
        ##my @nameList = split /,/, $nameArray;

        ##$addrArray = "";
        ##$nameArray = "";

        ##my $count = @addrList - 1;

        ##for (my $i = 0;$i < $count;$i++) {
           ##$addrArray .= "\"" . $addrList[$i] . "\",";
           ##$nameArray .= "\"" . $nameList[$i] . "\",";
        ##}
        ## this will add the quote without the comma

       ##$addrArray .= "\"" . $addrList[$count] . "\"";
       ##$nameArray .= "\"" . $nameList[$count] . "\"";
 ## gets the array started
 my $tempVar;

 my $tempEmail = $oCGI->param('friends_email1');
 my $numFriends = $oCGI->param('numFriends');


 my $addrArray  = "\"" . $tempEmail . "\"";
 my $nameArray  = "\"" . $oCGI->param('friends_name1') . "\"";

 ## generate list for the javascript array
 for (my $i = 2;$i <= $numFriends;$i++)
 {
   $tempVar = $oCGI->param('friends_email' . $i);

   if ($tempVar)
   {
```


NSDOCID: <WO 0133381A1 >

```
        $addrArray .= ",\"" . $tempVar . "\"";
        $nameArray .= ",\"" . $oCGI->param('friends_name' . $i) . "\"";
      }
    }



    $oTemplate->tags( {'numFriends'          => $numFriends,
                       'friends_name_array'  => $nameArray,
                       'friends_email_array' => $addrArray} );

    print $oCGI->header();

    print $oTemplate->get();

    $oDiskAccount->finish();
    $oUser->finish();
    $oReseller->finish();
    $oDiskAccount->disconnect();
}


##############################################################################
## Login in user who is comming from a Skip The Download
## Registration
##############################################################################

sub std_login () {
    my $username    = shift;
    my $oCGI        = shift;
      my $sSTDPartner = shift;
      my $sLanguage   = shift;
      my $sFileURL    = shift;
      my $sFileName   = shift;
      my $sAltURL     = shift;
      my $sCatId      = shift;
      my $sGid        = shift;
      my $sSid        = shift;
    my $oDBO    = new XDrive::DatabaseO(undef);

    my $oError = new XDrive::Error;
    my $oToken = xd_login($oCGI, $username, $oError, $oDBO);
    xd_set_session_cookie($oCGI, $sSTDPartner, $sLanguage);


    my $oTemplate = new XDrive::Template
      ({
      'partner_code' => $sSTDPartner,
      'language' => $sLanguage,
      'file' => 'skip_the_download_from_reg.thtml',
      'tags' =>
              {
              'FILE_URL'  => $sFileURL,
          'FILE_NAME' => $sFileName,
          'ALTRUL' => $sAltURL,
              'LANG' => $sLanguage,
              'STDPARTNER' => $sSTDPartner,
          'CATID' => $sCatId,
          'GID' => $sGid,
          'SID' => $sSid,
              }
      });
```

```
        $oTemplate->clear();
        print "Content-type: text/html\n\n";
        print $oTemplate->get();
        $oDBO->disconnect();
}

sub contact_cybergold {
        my $oCGI  = shift;
        my $msgid = shift;
        my $email = shift;

        my %args = (
        'mint_home'     => $ENV{'MINT_HOME'},
        'msg_mode'      => 'background_mode',

        'usr_email'     => $email,
        'msg_id'        => $msgid,

        'pay_type'      => 'reward',
        'pay_value'     => '1.00',
        'pay_readme'    => 'Thanks for registering with X:drive.',

        'co_name'       => 'X Drive',
        'co_key'        => 'registration',
        'co_account'    => '100500900000396',
        'mint_secret'   => '184FEB9DB81944502A1C91B2879484B6',

        'mint_url_pay' => 'http://www1.cybergold.com/payserver?pay_server',
        'msg_version'   => '2.2'
        );

        my($code, %res) = mint_invoke(\%args);

        ##this is temp code to print out stuff for cybergold
        ##my @keys = keys %res;
        ##my @values = values %res;
        ##while (@keys)
        ##{
        ##    die pop(@keys), '=', pop(@values), "\n";
        ##}

        return $code;
}

sub write_befree_log {
        my $oCGI = shift;

        my $source_id = $oCGI->cookie('sourceid');

        ##get the time
        ##needed to figure out name of file to write to
        my ($nSec, $nMin, $nHour, $nDay, $nMonth, $nYear, $sDay) =
(localtime(time))[0,1,2,3,4,5,6];

      if ($nYear > 99) {
            $nYear = substr($nYear,1,2);
        }

        ## Numeric month is 0-11, so add one
        $nMonth++;

        ## Handle Y2K issue
```


3NSDOCID: <WO 0133381A1 >

```
        if ( $nYear >= 80 ) {
                $nYear += 1900;
        }
        else {
                $nYear += 2000;
        }

        my $dToday = sprintf("%s%02d%02d", $nYear, $nMonth, $nDay);
        my $dTodayFull = sprintf("%02d%02d%s
%02d:%02d:%02d",$nMonth,$nDay,$nYear,$nHour,$nMin,$nSec);

        my $text =
"14524098\tS\t$dTodayFull\t$source_id\t1\t1\t1\t0.00\tUSD\tregistration\n";

      warn "#BF", $text, "\n";
        ##open(FILE, ">>xdrive_orders_$dToday.txt");
        ##print FILE $text;
        ##close(FILE);
}

sub send_email_referee {
        my $user_seq = shift;
        my $oDBO = shift;
      my $oCookie = shift;
        my $additional_quota = shift;
      my $referred_from = shift;

      my $language = $oCookie->getElement('language');
      my $partner = $oCookie->getElement('partner');

      if ($language eq 'spanish') {
            my $text = 'un amigo que usted refirió';
            if ($referred_from eq '2') {
                  $text = 'un usted compartió un fishero con';
            }
      }
      else {
            my $text = 'referred';
            if ($referred_from eq '2') {
                  $text = 'shared a file with';
            }
      }

      my $text = 'referred';
      if ($referred_from eq '2') {
            $text = 'shared a file with';
      }

        ##comes in as k, change to megabytes
        my $mbs = $additional_quota/1024;

        my $oUserData = XDrive::DatabaseO::Table::UserData->new(undef,
$oDBO);
        $oUserData->loadWhere("SEQ", $user_seq);
        my $email_address = $oUserData->fetchColumn("EMAIL_ADDRESS");
        my $name_first = $oUserData->fetchColumn("NAME_FIRST");
        my $name_last = $oUserData->fetchColumn("NAME_LAST");

        my $oTemplate =  new XDrive::Template( {'language'     => $language,
                                        'partner_code' => $partner} );

        $oTemplate->load('received_5MB_tellafriend.thtml');
```

```
        $oTemplate->tags( {'mbs'  => $mbs,
                           'text' => $text} );
        $oTemplate->clear();

        my $message = $oTemplate->get;

        my %toXdrive =
            (
            To      => "$name_first $name_last <$email_address>",
            Bcc     => '',
            From    => "support\@xdrive.com",
            Message => $message,
            Subject => "Congratulations!"
            );

        sendmail(%toXdrive);

    $oUserData->finish();
}
```

###signup_form.cgi

```
#!/usr/bin/perl
## Written by Martin Hald <mhald@uci.edu> on Sat, Jan 30, 1999.  Updated
## Fri Apr 5, 1996 to use new templates.  Updated Wed Apr 21 1999 to use
## new library code.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use CGI::Carp 'fatalsToBrowser';
use XDrive::CGI qw(:MAIN);
use XDrive::Client::Registration;
use XDrive::Template;
use XDrive::DatabaseO::Search;
use XDrive::Library;

use constant XD_REGISTRATION_DEFAULT_COUNTRY => 223;

exit &main;

sub main {
      my $oContent    = new XDrive::Template;
      my $oNavigation = new XDrive::Template;
      my $oLayout     = new XDrive::Template;
      my $oCGI        = new CGI;

      my $oCookie = XDrive::CGI::Cookie->new('x_session_info', $oCGI);

      my $oSearch;

        my $sReferee     = $oCGI->param('referee');
        my $sClaimTicket = $oCookie->getElement('ct');

      ## Defaults
      my $sUsername     = undef;
      my $sNameFirst    = undef;
      my $sNameLast     = undef;
      my $nYOB          = undef;
      my $nPromoSeq     = undef;
      my $nGender       = 3;
      my $sEmailAddress = undef;


        my ($country_seq, $occupation_seq, $postal_code, $ct_promo_seq);


        my %pullDownHash;
        if (XDDBConnectionCheck() && XDNFSCheck())
        {
            $oSearch = XDrive::DatabaseO::Search->new(undef);
        }
        else
        {
            $sClaimTicket = undef;
            $oSearch = undef;
            %pullDownHash = generate_db_array();
        }
     if ($sClaimTicket) {
           my $rhData = getUserData($oSearch, $sClaimTicket);
```


BNSDOCID: <WO 0133381A1 | >

```
            if ($rhData) {
                  my $oNewCgi = CGI->new($rhData);

                  $sUsername      = $oNewCgi->param('username');
                  $sNameFirst     = $oNewCgi->param('name_first');
                  $sNameLast      = $oNewCgi->param('name_last');
                  $sEmailAddress  = $oNewCgi->param('email_address');
                        $nYOB           = $oNewCgi->param('birth_year');
                  $nGender        = $oNewCgi->param('gender');
                  $occupation_seq = $oNewCgi->param('occupation_seq');
                  $country_seq    = $oNewCgi->param('country_seq');
                  $postal_code    = $oNewCgi->param('postal_code');
            }
      }

        if ($sReferee ne "") {
            # my $oCookie = XDrive::CGI::Cookie->new('x_session_info',
$oCGI);
                  my $sRefered_from = $oCGI->param('type');
            $oCookie->setElement({'partner_code'=>'xdrv'});
              $oCookie->setElement({'language'=>'english'});
                $oCookie->setElement({'referee' => $sReferee});
                $oCookie->setElement({'refered_from' => $sRefered_from});
                print "Set-Cookie: ".$oCookie->asString();
        }

      $oContent->partner('xdrv');
      $oNavigation->partner('xdrv');
      $oLayout->partner('xdrv');

      ## I'm assuming there will be one page and not a series of frames.
        ## this can be changed if need be
        # my $oCookie = XDrive::CGI::Cookie->new('x_session_info', $oCGI);
        # my $promo = $oCookie->getElement('promo');

        my $promo = $oCookie->getElement('promo');

      my $file_found;

        ##if we have a promo, try to get a special registration page
        if ($promo) {
            ##attempt to open a special registration page
                $file_found = $oLayout->load($promo . '_registration.thtml');
            if (!$file_found) {
                  ##if we cannot, open the general promo reg page
                  $file_found = $oLayout->load('promo_registration.thtml');
            }
        }

      ##is we don't have a promo then use the standard registration
        if ( (! $promo) || (! $file_found) ) {
            ## Load the required template HTML files.
            $oNavigation->load("front_nav.thtml");
            $oContent->load("front_signup.thtml");
            $oLayout->load("layout.thtml");

            $oContent->tags
            ({
            'username'          => $sUsername,
            'name_first'        => $sNameFirst,
            'name_last'         => $sNameLast,
            'email_address'     => $sEmailAddress,
```


BNSDOCID: <WO 0133381A1 | >

```
            'country'           =>
xd_form_countries_db_check(XD_REGISTRATION_DEFAULT_COUNTRY,
$oSearch,\%pullDownHash),
            'occupation'        => xd_form_occupation_db_check(undef,
$oSearch,\%pullDownHash),
            'media_type'        => xd_form_media_type_db_check(undef,
$oSearch,\%pullDownHash),
            'gender'         => xd_form_gender_db_check(undef,
$oSearch,\%pullDownHash),
            'select_marketing'  => 'CHECKED',
            'select_newsletter' => 'CHECKED',
            'referee'           => $sReferee,
            });

            ## Print out the HTML and exit
            $oLayout->tags
                ({
                'header_graphic' => 'header_registration.gif',
                'title' => 'Register Now!',
                'content' => $oContent->get,
                'navigation' => $oNavigation->get
                });
      }
      elsif ($sClaimTicket) {
            $oLayout->tags
                ({
                'country'           => xd_form_countries($country_seq,
$oSearch),
                'occupation'        => xd_form_occupation($occupation_seq,
$oSearch),
                'media_type'        => xd_form_media_type(undef, $oSearch),
                'gender'            => xd_form_gender($nGender, $oSearch),
                'select_marketing'  => 'CHECKED',
                'select_newsletter' => 'CHECKED',
            'username'          => $sUsername,
            'name_first'        => $sNameFirst,
            'name_last'         => $sNameLast,
                'email_address'     => $sEmailAddress,
                'birth_year'        => $nYOB,
                'referee'           => $sReferee,
                'postal_code'       => $postal_code
                });
       }
     else {
           $oLayout->tags
                ({
                'country'           =>
xd_form_countries_db_check(XD_REGISTRATION_DEFAULT_COUNTRY,
$oSearch,\%pullDownHash),
                'occupation'        => xd_form_occupation_db_check(undef,
$oSearch,\%pullDownHash),
                'media_type'        => xd_form_media_type_db_check(undef,
$oSearch,\%pullDownHash),
                'gender'            => xd_form_gender_db_check(undef,
$oSearch,\%pullDownHash),
                'select_marketing'  => 'CHECKED',
                'select_newsletter' => 'CHECKED',
                'referee'           => $oCGI->param('referee'),
                });
     }

       $oLayout->clear;
```


NSDOCID: <WO_____0133381A1_I_>

```
        print $oCGI->header, $oLayout->get;
        if (defined $oSearch)
        {
          $oSearch->disconnect();
        }

      return 0;
}


## johngaa add to check of db is up or down
sub generate_db_array
{
   ## create a hash
   my %tempHash;
   my $i = 1;
   my $key;
   my @tempVal;
   open FH,"<down_data.dat";

   while(<FH>)
   {
        chomp $_;
        if ($_ =~ /^#(\w+)/g)
        {
           my @newArray;
           $i = 1;
           $key = $1;
           $tempHash{$key} = [ @newArray ];
        }
        else
        {
          @tempVal = split(/\~/,$_);

          $tempHash{$key}->[$i - 1][0] = $tempVal[0];
          $tempHash{$key}->[$i - 1][1] = $tempVal[1];
          $i++;
        }
   }

   close FH;
   return %tempHash;
}

sub xd_form_countries_db_check
{
   my $default = shift;
   my $oSearch = shift;
   my $pullDownHash = shift;
   my $returnVal;

   if (defined $oSearch)
   {
      $returnVal = xd_form_countries(XD_REGISTRATION_DEFAULT_COUNTRY,
$oSearch),
   }
   else
   {
      ## insert alternate source of countries here
      my $temp1 = $pullDownHash->{'country'};
      $returnVal = options_list(XD_REGISTRATION_DEFAULT_COUNTRY,@$temp1);
   }
```


FNSDOCID: <WO 01333381A1 >

```
    return $returnVal;
}


sub xd_form_occupation_db_check
{
    my $default = shift;
    my $oSearch = shift;
    my $pullDownHash = shift;
    my $returnVal;

    if (defined $oSearch)
    {
        $returnVal = xd_form_occupation(undef, $oSearch),
    }
    else
    {
        ## insert alternate source of countries here
        my $templ = $pullDownHash->{'occupation'};
        $returnVal = options_list(undef,@$templ);
    }

    return $returnVal;
}

sub xd_form_media_type_db_check
{
    my $default = shift;
    my $oSearch = shift;
    my $pullDownHash = shift;
    my $returnVal;

    if (defined $oSearch)
    {
        $returnVal = xd_form_media_type(undef, $oSearch),
    }
    else
    {
        ## insert alternate source of countries here
        my $templ = $pullDownHash->{'media_type'};
        $returnVal = options_list(undef,@$templ);
    }

    return $returnVal;
}

sub xd_form_gender_db_check
{
    my $default = shift;
    my $oSearch = shift;
    my $pullDownHash = shift;
    my $returnVal;

    if (defined $oSearch)
    {
        $returnVal = xd_form_gender(undef, $oSearch),
    }
    else
    {
        ## insert alternate source of countries here
        my $templ = $pullDownHash->{'gender'};
        $returnVal = options_list(undef,@$templ);
    }
```


3NSDOCID: <WO 0133381A1 I >

```
    return $returnVal;
}


## end of johngaa add
sub getPromoURI ($$) {
    my $oSearch   = shift;
    my @promo_seq = (shift);

    my $oDBH = $oSearch->fetchDBO->fetchDBH();

    my $st = "SELECT uri FROM xdrive.promo WHERE seq = ?";

    my $data = $oDBH->selectcol_arrayref($st, undef, @promo_seq);

    return $data->[0];
}

sub getUserData {
      my $oSearch = shift;
      my $sTicket = shift;

      my $oDBH    = $oSearch->fetchDBO->fetchDBH();
      my $sQuery  = "SELECT DATA FROM BATCH_USER_DATA WHERE CODE = ?";
        my $oCursor = $oDBH->prepare($sQuery);
        $oCursor->bind_param(1, $sTicket);
        $oCursor->execute;

      my $rh;
      my $sData = $oCursor->fetchrow_array();
      # my ($sData) = $oCursor->fetchrow_array();
      # eval $sData;
      # return $rh;
      return $sData;
}
```


RNSDOCID: <WO 0133381A1 I >

###signup_success.cgi

```
#!/usr/bin/perl
## This CGI allows us to pass the sst and sid on to the inner frame
##
## Modified by Justin White on 10/14/99 by manually printing the
## header to the browser and getting rid of the XDrive::CGI import.
## Created new cgi, database, and error objects to pass to xd_security_check.
## Also added the exit in the sub call.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI::Carp qw(fatalsToBrowser);
use CGI ();
use Token;
use XDrive::Client::Security;
use XDrive::Template;
use XDrive::DatabaseO;
use XDrive::Error;
use XDrive::Library;
use XDrive::CGI::Cookie;

&main();

exit;

sub main
      {
        my $oCGI     = new CGI;
        my $oDBO     = new XDrive::DatabaseO;
        my $oErr     = new XDrive::Error;
      my $oCookie = new XDrive::CGI::Cookie('x_session_info', $oCGI);

        ####
        ## Attempt to autenticate the user
        ####

        my $oToken = xd_security_check($oDBO,$oCGI,$oErr);

        ####
        ## If the autentication fails or there is an error during the
        ## autentication phase then redirect to the error CGI
        ####

        if ($oErr->Occurud)
                {
                xd_fatal_error($oCGI,$oErr);
                exit;
                }

        ####
        ## Otherwise we have a valid session
        ####

        my $sUsername = $oToken->data('user');

     ### Edited by Justin so that the partner_code is looked for in
     ### the cookie instead of the token table.
       # my $sPartner  = $oToken->data('partner_code');
       my $sPartner = $oCookie->getElement('partner');
```


NSDOCID: <WO_____0133381A1_I_>

```
        if (! defined $sPartner)
        {
           $sPartner = "xdrv";
           $oCookie->setElement({'partner'=>$sPartner});
           print "Set-Cookie: ",$oCookie->asString();
        }

        my $oTemplate = new XDrive::Template( {'partner_code' => $sPartner}
);

        $oTemplate->load('signup_success.thtml');
        $oTemplate->tags( {'username' => $sUsername} );

        print "content-type: text/html\n\n";

        print $oTemplate->get();

      $oDBO->disconnect();

        return 0;
}
```


BNSDOCID: <WO 0133381A1 | >

###signup_toc.cgi

```
#!/usr/bin/perl
## Written by Martin Hald <mhald@uci.edu> on Sat, Jan 30, 1999.  Updated
## Fri Apr 5, 1996 to use new templates.
##
## Modified by Justin White on 10/11/1999 so that it sets a cookie.
##
## Modified by Martin Hald on 11/15/1999 so that is now accepts
##    - partner
##    - language
##    - agreeuri
##    - disagreeuri

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use CGI::Carp qw(fatalsToBrowser);
use XDrive::Template;
use XDrive::CGI::Cookie;

&main();

exit;

sub main {
      my $cookie;
      my $sPartnerCode;

      my $oCGI     = new CGI;
      my $oCookie = XDrive::CGI::Cookie->new('x_session_info', $oCGI);
      my $sReferee = $oCGI->param('referee');
      my $sPartner = $oCGI->param('partner');
      my $sLanguage = $oCGI->param('language');
      my $sRefered_from = $oCGI->param('type');

      $oCookie->setElement({'partner_code'=>$sPartner});
      $oCookie->setElement({'language'=>$sLanguage});

      if ($sReferee ne "") {
            $oCookie->setElement({'referee' => $sReferee});
            $oCookie->setElement({'refered_from' => $sRefered_from});
            print "Set-Cookie: ".$oCookie->asString();
      }

      if (! defined $sPartner) {
            $sPartner = 'xdrv';
      }

      ## Load the terms and conditions
      my $hDefaults = {'partner_code'=>$sPartner,'cookie'=>$oCookie};
      my $oContent  = new XDrive::Template($hDefaults);
      my $oLayout   = new XDrive::Template($hDefaults);

      $oContent->load('presignup.thtml');

      if ($sPartner eq 'xdrv') {
            my $oNavigation = new XDrive::Template($hDefaults);
            my $oHeader     = new XDrive::Template($hDefaults);
            my $oFooter     = new XDrive::Template($hDefaults);
```


INSDOCID: <WO_____0133381A1_I_>

```
        $oLayout->load('layout.thtml');
        $oNavigation->load('front_nav.thtml');
        $oHeader->load('presignup_header.thtml');
        $oFooter->load('presignup_footer.thtml');
        $oContent->tags({'header'    => $oHeader->get,
                         'footer'    => $oFooter->get, });
        $oLayout->tags({'navigation'     => $oNavigation->get,
                        'header_graphic' => 'header_registration.gif',});
    } else {
        $oLayout->load('tac_wrapper.thtml');
    }

    my $sAgreeURI    = $oCGI->param('agreeuri');
    my $sDisagreeURI = $oCGI->param('disagreeuri');

    $oLayout->tags({ 'title'       => 'Terms and Conditions',
                     'content'     => $oContent->get,
                     'agreeuri'    => $sAgreeURI,
                     'disagreeuri' => $sDisagreeURI,});
    $oLayout->clear;

    print $oCGI->header();
    print $oLayout->get;

    return 0;
}
```


BNSDOCID: <WO 0133381A1 I >

###skip_the_download.cgi

```
#!/usr/bin/perl

use strict;
use lib $ENV{PERL_XDRIVE_LIB};

use CGI qw(param redirect header cookie);
use CGI::Cookie;

use LWP::UserAgent;

use CGI::Carp qw(fatalsToBrowser);
use XDrive::Client::Security;
use XDrive::Client::Actions;
use XDrive::DatabaseO::Table::DiskAccount;
use XDrive::DatabaseO::Search;
use XDrive::DatabaseO::Transaction;
use XDrive::Template;
use XDrive::CGI qw(:MAIN);
use XDrive::CGI::Cookie;
use XDrive::DatabaseO;
use XDrive::Error;

use constant TRUE => (1==1);
use constant FALSE => ! TRUE;
use Token;


my $oDBO = new XDrive::DatabaseO;
main($oDBO);

$oDBO->disconnect;
exit;

##############################################################################
## NOTE: Remove the quota check from here.  will be handled in java.
##############################################################################

sub main
      {

      my $oDBO = shift;
      my $oCGI    = CGI->new();
      my $oErr = new XDrive::Error;
      my $oCookie = XDrive::CGI::Cookie->new('xd_std_info', $oCGI);


      ## params for file url and file name
      my $sFileURL  = $oCGI->param('FILEURL');
      my $sFileName = $oCGI->param('FILENAME');
      my $sAltURL   = $oCGI->param('ALTURL');
      my $sSid      = $oCGI->param('SID');
      my $sGid      = $oCGI->param('GID');
      my $sCatId      = $oCGI->param('CATID');
      my $sPartnerCode = $oCGI->param('STDPARTNER');
      my $sLanguageCode = $oCGI->param('LANG');
      my $sUsername = $oCGI->param('user');
      my $sPassword = $oCGI->param('pass');
      my $sError    = $oCGI->param('error');
      my $sCookie   = $oCGI->cookie('SST');
```


BNSDOCID: <WO_____0133381A1_I_>

```
        my $sessionCookie;
        my $sPromo = '';
        my $sPartnerParams = "";
        my $sCNetString = "";


        ## IF THE SPECIAL C|NET VARIABLES ARE DECLARED
        ## THEN GENERATE THE C|NET STRING
        ## THIS URL IS CALLED FOR ANY FILE DOWNLOADED
        ## FROM C|NET SO THAT THEY CAN CREDIT THE FILE
        ## BEING DOWNLOADED
        if (
            ($sSid != '') &&
            ($sGid != '') &&
            ($sCatId != '')
            ) {


            $sAltURL = "http://beta.cnet.com/downloads/0-" . $sCatId . "-107-"
. $sSid . ".html?tag=ex.dl.xdrive";

            ## IF YOU ARE ON THE TEST SERVERS,
            ## THEN USE C|NET'S TEST URL
            if (
              ($ENV{'HTTP_HOST'} eq 'martini.xdrive.com') ||
              ($ENV{'HTTP_HOST'} eq 'antifreeze.xdrive.com')
              ){

              $sCNetString = "http://abv-sjc2-
export2.cnet.com/downloads/0,10152,0-" .
                             $sCatId .
                            "-110-" .
                            $sSid .
                            ",00.html?gid=" .
                            $sGid .
                            "&tag=ex.dl.xdrivepop.dlcgi." .
                             $sSid;

              ## ELSE, USE THEIR REAL URL
            } else {

            $sCNetString = "http://abv-sjc1-
export2.cnet.com/downloads/0,10152,0-" .
                             $sCatId .
                            "-110-" .
                            $sSid .
                            ",00.html?gid=" .
                            $sGid .
                            "&tag=ex.dl.xdrivepop.dlcgi." .
                             $sSid;

            }

      }


      $sPartnerParams =
"STDPARTNER=$sPartnerCode&LANG=$sLanguageCode&ALTURL=$sAltURL";

      $oCookie->setElement(
                        {
                         'FILEURL'     => $sFileURL,
                         'FILENAME'    => $sFileName,
```


BNSDOCID: <WO 01333381A1 | >

```
                        'ALTURL'      => $sAltURL,
                        'STDPARTNER' => $sPartnerCode,
                        'LANG'        => $sLanguageCode,
                        'CATID'       => $sCatId,
                        'SID'         => $sSid,
                        'GID'         => $sGid,
                    ));

    print "Set-Cookie: ". $oCookie->asString();

    my $n = 0;
    my $rv;

    ## Create the database object
    my $oSearch = XDrive::DatabaseO::Search->new($oDBO);

    ##The token for the user session
    my $oToken;

    ## If u/p
    if (defined $sUsername && defined $sPassword)
        {
        ## Auth or fail
        if (xd_auth_password($sUsername, $sPassword, $oDBO))
            {
            $oToken = xd_login($oCGI,$sUsername,$oErr);
            $sessionCookie = xd_set_session_cookie($oCGI,
$sPartnerCode, $sLanguageCode, $sPromo);
            }
        else
            {
            ## Login failed
            my $r = getHTMLContent
                (
                'skip_the_download_login_failed.thtml',
                 $sFileURL,
                $sFileName,
                $sAltURL,
                $sPartnerCode,
                $sLanguageCode
                );

            print "Content-type: text/html\n\n";
            print $r;
            return 1;
        }


    }
        ## error or cookie not defined
    elsif ( (length($sError) > 0) || (length($sCookie) == 0) )
        {
        ## show the login page
        my $r = getHTMLContent('skip_the_download_login.thtml',
                               $sFileURL,
                               $sFileName,
                               $sAltURL,
                        $sPartnerCode,
                        $sLanguageCode
                        );

        print "Content-type: text/html\n\n";
        print $r;
```


3NSDOCID: <WO 0133381A1 I >

```
            return 1;
            }
      else
            ## cookie defined so authenticate it
            {
            $oToken = xd_security_check($oDBO,$oCGI,$oErr);
            $sessionCookie = xd_set_session_cookie($oCGI, $sPartnerCode,
$sLanguageCode, $sPromo);

            if ($oErr->Occurud)
                  {
                  print $oCGI->redirect("/cgi-
bin/skip_the_download.cgi?&error=expired&$sPartnerParams");
                        return 1;
                  }
            }


      if (!$sFileURL) {
          my $thtml = ($sAltURL != '')?
'skip_the_download_no_alt_error.thtml'
                                    : 'skip_the_download_error.thtml';


          my $sMessage = $oErr->ReturnMessageGivenCode(1220);

          &ThtmlErrorOut($thtml,
                      $sMessage,
                      $sFileURL,
                      $sFileName,
                      $sAltURL,
                      $sPartnerCode,
                      $sLanguageCode
                      );
      }


      ## create the Actions object and download the file
      my $oAction = new XDrive::Client::Actions($oToken,$oCGI);

      ## set the filename and file url
      $oAction->STDFilename($sFileName);
      $oAction->STDURL($sFileURL);

      ## see if file exists. if yes, give em message
      my $bFileExists = $oAction->STDFileExists();

      if ($bFileExists)
            {
            $oDBO->disconnect();
            my $sMessage = $oErr->ReturnMessageGivenCode(1242);

      ErrorOut($sMessage,$sFileURL,$sFileName,$sAltURL,$sPartnerCode,$sLangua
geCode);
            }

      ## Check that the file is not already being downloaded
      if ($oSearch->XDSTDBeingDownloaded($oToken->user,$sFileURL))
            {
            $oDBO->disconnect();
            my $sMessage = $oErr->ReturnMessageGivenCode(1243);
```


BNSDOCID: <WO 0133381A1 | >

```
      ErrorOut($sMessage,$sFileURL,$sFileName,$sAltURL,$sPartnerCode,$sLangua
geCode);
            }

      ## Spool the action to download the file
      my $oTransaction = new XDrive::DatabaseO::Transaction($oDBO);
      my $nSeq = $oTransaction->insertSkipTheDownload
            (
            $oToken->user,
            $sFileName,
            $sFileURL,
            0,
            undef
            );
      $oTransaction->commit;

      ## Insert failed return an error
      if ($nSeq < 0)
            {
            $oDBO->disconnect();
            my $sMessage = $oErr->ReturnMessageGivenCode(1244);

      ErrorOut($sMessage,$sFileURL,$sFileName,$sAltURL,$sPartnerCode,$sLangua
geCode);
            }

            ## IF THE INSERT DIDN'T FAIL,
            ## AND THE SPECIAL C|NET URL ISN'T NULL
            ## THEN CREDIT C|NET
            elsif ($sCNetString ne '')
            {

              my $oUA = new LWP::UserAgent;
              $oUA->agent("XDriveSTD/0.1 " . $oUA->agent);

              # Create a request
              my $oRequest = new HTTP::Request GET => $sCNetString;

              # Pass request to the user agent and get a response back
              my $oResult = $oUA->request($oRequest);

            }



     print redirect("/cgi-
bin/skip_the_download_status.cgi?seq=$nSeq&$sPartnerParams");
}


sub ErrorOut ()
{
    my $sMessage = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;
```


BNSDOCID: <WO 0133381A1 I >

```
    my $html = &getHTMLContent('skip_the_download_no_alt_error.thtml',
                           $sFileURL,
                           $sFileName,
                           $sAltURL,
                           $sPartnerCode,
                           $sLanguageCode,
                           $sMessage,
                           );


    print "Content-type: text/html\n\n";
    print $html;
    exit(0);
}


sub ThtmlErrorOut ()
{
    my $thtml = shift;
    my $sMessage = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;

    my $html = &getHTMLContent($thtml,
                           $sFileURL,
                           $sFileName,
                           $sAltURL,
                           $sPartnerCode,
                           $sLanguageCode,
                           $sMessage,
                           );


    print "Content-type: text/html\n\n";
    print $html;
    exit(0);
}

sub getHTMLContent
{
   my $thtmlfile = shift;
   my $sFileURL = shift;
   my $sFileName = shift;
   my $sAltURL = shift;
   my $sPartnerCode = shift;
   my $sLanguageCode = shift;
   my $sMessage = shift;

   my $template = new XDrive::Template
      ({
      'partner_code' => $sPartnerCode,
      'language' => $sLanguageCode,
        'file' => $thtmlfile,
        'tags' =>
            {
            'FILE_URL'  => $sFileURL,
            'FILE_NAME' => $sFileName,
            'ALTURL' => $sAltURL,
            'LANG' => $sLanguageCode,
```


BNSDOCID: <WO 0133381A1 I >

```
            'STDPARTNER' => $sPartnerCode,
            'message' => $sMessage,
            }
        });

    $template->clear();

    return $template->get;
}

## Create a string which makes the previously created
## cookie expire.

sub empty_cookie
    {
        my $oSelf = shift;
        my $cookie = new CGI::Cookie
        (
        -name    =>  'sst',
        -value   => '',
        -expires => '-1M'
        );
        print header(-cookie=>[$cookie]);
    }
```


3NSDOCID: <WO_____0133381A1_I_>

###skip_the_download_status.cgi

```
#!/usr/bin/perl

use lib ($ENV{PERL_XDRIVE_LIB});

use CGI qw(header redirect);
use XDrive::CGI;
use XDrive::Client::Actions;
use XDrive::Client::Security;
use XDrive::DatabaseO;
use XDrive::DatabaseO::Table::SkipDownload;
use XDrive::Template;
use XDrive::Error;
use XDrive::Library;
use Token;

use strict;

use constant TEMP_DIR => XDSTDTempDirectory();

&main;
exit(0);


sub main
{
    ## get parameters
    my $nFileSize;
    my $sTempFile;
    my $sFileName;
    my $sError;
    my $nStatus;
    my $bDone;
    my $percent = 0;
    my $nDownloadedSize = 0;
    my $sURL;
    my $nNow;

    my $oCGI = new CGI();
    my $nSeq = $oCGI->param('seq');
    my $nStart = $oCGI->param('start');
    my $sPartnerCode = $oCGI->param('STDPARTNER');
    my $sLanguageCode = $oCGI->param('LANG');
    my $sAltURL = $oCGI->param('ALTURL');
    my $previous_percent = $oCGI->param('pp');

    ## SET THE CONNECTION_COUNT = 0 IF IT ISN'T PASSED IN
    my $connection_count = ($oCGI->param('cc')) ? $oCGI->param('cc') : 0;

    my $oErr = new XDrive::Error;

    ## get the token and the action object
    my $oDBO = new XDrive::DatabaseO;
    my $oToken = xd_security_check($oDBO,$oCGI,$oErr);
    my $oAction = new XDrive::Client::Actions($oToken,$oCGI);

   my $sPartnerParams =
"STDPARTNER=$sPartnerCode&LANG=$sLanguageCode&ALTURL=$sAltURL";

    if ($oErr->Occurud)
```


RNSDOCID: <WO 0133381A1 I >

```
  {
    print redirect("/cgi-bin/skip_the_download.cgi?$sPartnerParams");
    return;
  }

  ## if the sequence number was passed then get infomation from the
database.
  if (defined $nSeq)
  {
    ## load the information from the datbase
    my $oSkip = XDrive::DatabaseO::Table::SkipDownload->new(undef, $oDBO);
    $oSkip->loadWhere('SEQ',$nSeq);
    $nFileSize = $oSkip->fetchColumn('FILE_SIZE_BYTES');
    $sTempFile = $oSkip->fetchColumn('FILENAME_FOR_TEMP_FILE');
    $sFileName = $oSkip->fetchColumn('FILE_NAME');
    $nStatus   = $oSkip->fetchColumn('IS_ACTIVE');
    $sError    = $oSkip->fetchColumn('ERROR_CODE');
    $sURL      = $oSkip->fetchColumn('FILE_URL');
    $bDone     = $oSkip->fetchColumn('IS_DONE');
  }

  ## XDRIVE.SKIP_THE_DOWNLOAD.IS_ACTIVE lengend
  ##   0 - still in queue
  ##   1 - being downloaded
  ##   2 - on hold


  ## IF CONNECTION_COUTN > 9, THEN GO TO THE FILE NOT FOUND (1220) ERROR
  ## DISPLAY, BUT KEEP TRYING TO DOWNLOAD THE FILE
  if ($connection_count >9) {
    $sError=1220;
  }

  ## IF AN ERROR OCCURRED THEN DISPLAY IT
  ## AND THEN EXIT(0);
  if (defined $sError)
  {
    if ($sError == 1240)
    {
        &DisplayQuotaError('',
                        $sURL,
                        $sFileName,
                        $sAltURL,
                        $sPartnerCode,
                        $sLanguageCode
                        );
    }
    else
    {
        my $oErr = new XDrive::Error;
        $oErr->AddErrorByErrorCode($sError);
        &DisplayError($oErr->Message(),
                  $sURL,
                  $sFileName,
                  $sAltURL,
                  $sPartnerCode,
                  $sLanguageCode
                  );
    }
  }

  ## IF THERE IS NO ERROR, THEN GATHER STATUS
  ## AND DISPLAY TO THE USER
```


BNSDOCID: <WO_____0133381A1_I_>

```
  else
  {

    ## Get file size, later change to get from a tmp file
    my $sPath = TEMP_DIR."/$sTempFile";


    ## IF STATUS IS LISTED AS DONE IN THE DB,
    ## THEN SHOW THE DONE PAGE
    if ($bDone == 1)
    {
        &DisplayDone('',
                $sURL,
                $sFileName,
                $sAltURL,
                $sPartnerCode,
                $sLanguageCode
                );
    }

    ## ELSE FILE IS NOT DONE,
    ## GATHER MORE DATA AND DISPLAY TO USER
    else
    {


        ## IF STATUS IS NOT ACTIVE, OR THE FILE DOESN'T EXIST
        ## THEN DISPLAY THE CONTACTING SERVER PAGE
        ## REMOVED: || ! -e $sPath
        ## FROM CHECK
        if (  ($nStatus == 0 || -e $sPath)
              &&(!($previous_percent >= 0))
             )
        {

    &DisplayContactServer($nSeq,$sURL,$sFileName,$sAltURL,$sPartnerCode,$sL
anguageCode,$sPartnerParams,$connection_count);
        }

        ## ELSE, GATHER STATUS DATA
        ## AND DISPLAY TO USER
        else
        {

          ## Set the start time in seconds since the epoch if not passed
          ## as parameter
          if (! defined $nStart || $nStart !~ /^\d+$/)
          {
              $nStart = time();
          }


          ## IF NO FILE SIZE HAS BEEN SET IN THE DB
          ## DISPLAY ZERO PERCENTAGES TO THE USER
          if (! defined $nFileSize || $nFileSize == 0)
          {
              $nFileSize = '0';
              $percent   = '0';
              &DisplayStatus($nSeq,$percent,$sFileName,$nFileSize,'',
                        $nStart,'','',

$sAltURL,$sPartnerCode,$sLanguageCode,$sPartnerParams);
```


BNSDOCID: <WO 0133381A1_I_>

```
            }

            ## ELSE
            ## * THERE WAS NO ERROR
            ## * THE FILE WAS NOT DONE
            ## * THE FILE EXISTS IN THE TEMPORARY DIRECTORY
            ## * THE DB HAS AN EXPECTED FILE SIZE
            ## SO READ THE FILE, CALCULATE DATA, AND DISPLAY TO USER
            else
            {


                ## These checks are performed before inserting the skip
information
                ## into the database, but we will do it again here to be
safe.

#       my $sError = $oErr->ReturnMessageGivenCode(141);
#       XDErrorToBrowser("",$sError,undef,$oToken);
                ##die "Cannot check $sPath" if $sPath =~ /\.\./;
                ##die "Cannot check $sPath" if $sPath =~ /\/\//;

                ## Get the size of the download object
                my @file_info = stat($sPath);

                ## Conver the downloaded file size into KB
                if ($file_info[7] > 0)
                {
                  $nDownloadedSize = $file_info[7];

                  if ($nFileSize > 0)
                        {
                        $percent = 100 * $nDownloadedSize/$nFileSize;
                        }
                  if ($percent < 0)
                        {
                        $percent = 0;
                        }
                  $percent = sprintf("%.2f",$percent);
                }

                ## IF THE FILE IS GONE NOW, OR SOMEOTHER CONDITION, THE USER
                ## WILL NEVER SEE THE %DONE DROP
                ## USE WHICH EVER IS LARGER, THE PRECENT THAT WE JUST
DISPLAYED
                ## OF THE ONE THAT WE JUST READ FROM THE FILE SYSTEM
                $percent = ($previous_percent > $percent) ? $previous_percent
: $percent;

                ## We have already transfered some of the file, so we can now
                ## estimate the download time.
                $nNow = time();

                my $sInfo;
                my $nElapsedSec  = $nNow - $nStart;
                my $nTransPerSec = 0;

                if ($nElapsedSec)
                {
                  $nTransPerSec = $file_info[7]/$nElapsedSec;
                }

                if ($nTransPerSec > 0)
```


INSDOCID: <WO_____0133381A1_I_>

```
                {
                  my $partial  = $percent/100;
                  my ($nSecsRemain, $nMin, $nSecs, $nTransPerSecMB);

                  if ($partial == 0) {
                      $sInfo = '';
                  } else {
                      $nSecsRemain  = ($nElapsedSec/$partial)-$nElapsedSec;
                      $nMin = int($nSecsRemain/60);
                      $nSecs = $nSecsRemain % 60;
                      $nTransPerSecMB = $nTransPerSec/1024;

                  }


                  $sInfo = sprintf(", %d:%02d remaining (%.2f
KB/sec)",$nMin,$nSecs
                                  ,$nTransPerSecMB);
                }

                my $nTrans;

                my $k = "KB";
                my $nDiv = 1024;
                my $nTempSize = $file_info[7] || 0;

                if ($nFileSize > 1024*1024)
                {
                  $k = "MB";
                  $nDiv = 1024*1024;
                }

                if ($nFileSize < 0)
                  {
                  $nFileSize = 0;
                  }

                $nFileSize = sprintf("%.2f",$nFileSize/$nDiv);
                $nTrans = sprintf("%.2f",$nTempSize/$nDiv);

                &DisplayStatus($nSeq,$percent,$sFileName,$nFileSize,'',
                          $nStart,$sInfo,$k,

$sAltURL,$sPartnerCode,$sLanguageCode,$sPartnerParams);

              ## END OF READING DATA FROM SYSTEM AND
              ## DISPLAYING TO USER
              }

            ## END OF NO EXPECTED SIZE IN DB
            ## SHOW USER ZERO PERCENTAGES
            }

        ## END OF FILE MUST BE DONE
        ## SO SHOW A DONE
        }

    ## END OF NO ERROR
    }

    $oDBO->disconnect;
}
```


PNSDOCID: <WO 013338141 | >

```
sub DisplayContactServer
{
    my
($nSeq,$sURL,$sFileName,$sAltURL,$sPartnerCode,$sLanguageCode,$sPartnerParams
,$connection_count) = @_;

    my ($sHostname) = $sURL =~ /\/\/([^\/]+)\//;
    $connection_count++;

    ## load the status page
    my $template = new XDrive::Template
      ({
          'partner_code' => $sPartnerCode,
          'language' => $sLanguageCode,
          'file' => 'skip_the_download_contacting.thtml',
          'tags' =>
          {
            'hostname' => $sHostname,
            'continue_to' => "/cgi-
bin/skip_the_download_status.cgi?seq=$nSeq&cc=$connection_count&$sPartnerPara
ms",
            'fileName' => $sFileName,
            'altURL' => $sAltURL,
            }
      });
    print "Content-type: text/html\n\n";
    print $template->get;
}


sub DisplayStatus
{
    my $nSeq = shift;
    my $percent = shift;
    my $filename = shift;
    my $filesize = shift;
    my $transferred = shift;
    my $start = shift;
    my $info = shift;
    my $k = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;
    my $sPartnerParams = shift;

    my $percent_disp;

    if ($filesize <= 0)
    {
      $filesize = 'Unknown';
      $k = ' ';
      $percent_disp = 'Unknown';
      $percent = 0;
    }
    else
    {
      $percent_disp = "$percent%";
    }

    ## load the status page
    my $template = new XDrive::Template
      ({
```


SDOCID: <WO_____0133381A1_I_>

```
            'partner_code' => $sPartnerCode,
            'language' => $sLanguageCode,
            'file' => 'skip_the_download_status.thtml',
            'tags' =>
            {
              'PERCENT_DISP' => $percent_disp,
              'PERCENT' => $percent,
              'FILE_NAME' => $filename,
              'FILE_SIZE' => $filesize,
              'TRANSFERRED' => $transferred,
              'TRANSINFO' => $info,
              'K' => $k,
              'URL' => "/cgi-
bin/skip_the_download_status.cgi?seq=$nSeq&start=$start&pp=$percent&$sPartner
Params",
              'altURL' => $sAltURL
              }
        });

    $template->clear;
    print "Content-type: text/html\n\n";
    print $template->get;
}


sub DisplayDone
{
    my $sMessage = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;

    &ErrorOut('skip_the_download_complete.thtml',
            $sFileURL,
            $sFileName,
            $sAltURL,
            $sPartnerCode,
            $sLanguageCode,
            $sMessage
            );

}


sub DisplayError
{
    my $sError = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;

    my $thtml = ($sAltURL != '')? 'skip_the_download_no_alt_error.thtml'
                                : 'skip_the_download_error.thtml';

    &ErrorOut($thtml,
            $sFileURL,
            $sFileName,
            $sAltURL,
            $sPartnerCode,
```

```
            $sLanguageCode,
            $sError
            );

}


sub DisplayQuotaError
{
    my $sError = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;

    &ErrorOut('skip_the_download_quota_error.thtml',
            $sFileURL,
            $sFileName,
            $sAltURL,
            $sPartnerCode,
            $sLanguageCode,
            $sError
            );

}


sub ErrorOut ()
{
    my $sTHTMLFILE = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;
    my $sMessage = shift;

            my $template = new XDrive::Template
                ({
            'language' => $sLanguageCode,
                'partner_code' => $sPartnerCode,
                'file' => $sTHTMLFILE,
                'tags' =>
            {
                'message' => $sMessage,
                'altURL' => $sAltURL,
                'fileURL' => $sFileURL,
                'FILE_NAME' => $sFileName,
                'LANG' => $sLanguageCode,
                'ALTURL' => $sAltURL,
                'STDPARTNER' => $sPartnerCode,
            }
        });

  my $html = $template->get;

  print "Content-type: text/html\n\n";
  print $html;
```


NSDOCID: <WO_____0133381A1_I_>

BNSDOCID: <WO 01333B1A1 I >

```
            $sLanguageCode,
            $sError
            );

}


sub DisplayQuotaError
{
    my $sError = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;

    &ErrorOut('skip_the_download_quota_error.thtml',
            $sFileURL,
            $sFileName,
            $sAltURL,
            $sPartnerCode,
            $sLanguageCode,
            $sError
            );

}


sub ErrorOut ()
{
    my $sTHTMLFILE = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;
    my $sMessage = shift;

            my $template = new XDrive::Template
                ({
            'language' => $sLanguageCode,
                'partner_code' => $sPartnerCode,
                'file' => $sTHTMLFILE,
                'tags' =>
            {
                'message' => $sMessage,
                'altURL' => $sAltURL,
                'fileURL' => $sFileURL,
                'FILE_NAME' => $sFileName,
                'LANG' => $sLanguageCode,
                'ALTURL' => $sAltURL,
                'STDPARTNER' => $sPartnerCode,
            }
          });

    my $html = $template->get;

    print "Content-type: text/html\n\n";
    print $html;
```

```
      my $sUser_name = $oUserInfo->fetchColumn('NAME_FIRST') . " " .
$oUserInfo->fetchColumn('NAME_LAST');
      my $sUser_email = $oUserInfo->fetchColumn('EMAIL_ADDRESS');
      $oUserInfo->finish();
        $oUserInfo->disconnect();

      if ($sAddress)
            {
            &send_mail($sName, $sAddress, $sUser_name, $sUser_email,
$nUser_ID, $oCGI, $oToken, $oErr, $oCookie);
            &display_thank_you($oCGI,$oCookie);
            }
      else
            {
            &display_form($oCGI,$oCookie);
            }
      }


sub send_mail {
      my ($sName, $sAddress, $sUser_name, $sUser_email, $nUser_ID, $oCGI,
$oToken, $oErr, $oCookie) = @_;

      ## send out email for each friend only if form is filled out
      ## get number of friend fields

      my $numFriends = $oCGI->param("numFriends");
      for (my $i=1; $i<=$numFriends; $i++)
            {
            $sAddress = $oCGI->param('friends_email' . $i);
            $sName = $oCGI->param('friends_name' . $i);
            my $sMessage = &get_message($sUser_name, $nUser_ID, $sName,
$sUser_name,$oCookie);

            ##only send the mail if the email address is filled out
            if ($sAddress)
            {
                my %toXdrive =
                (
                To      => "$sName <$sAddress>",
                Bcc     => '',
                From    => "$sUser_email",
                Message => $sMessage,
                Subject => "Check out X:drive!",
                );

                unless (sendmail %toXdrive)
                {
                warn "## Mail error ".$Mail::Sendmail::error;
                if ($Mail::Sendmail::error =~ /451/)
                        {
                  my $sError = $oErr->ReturnMessageGivenCode(1310);
                        XDErrorToBrowser("",$sError,undef,$oToken);
                        }
          else
                {
                    my $sError = $oErr->ReturnMessageGivenCode(1311);

XDErrorToBrowser('tell_a_friend__error.thtml',$sError,undef,$oToken);
                }
                exit(1);
              }
            }
```

```
    }


}


sub get_formfield {
    my ($sNum,$oCookie) = @_;

    my $oFormField = new XDrive::Template
      ({
      'language'     => $oCookie->getElement('language'),
      'partner_code' => $oCookie->getElement('partner'),
      });
    $oFormField->load('tell_form_fields.thtml');

    $oFormField->tags
        ({
        'number' => $sNum
        });

    return $oFormField->get;
}


sub get_message {
    my ($sUser_name, $nUser_ID, $sName, $sUserEmail,$oCookie) = @_;

    my $oMessage = new XDrive::Template
      ({
      'language'     => $oCookie->getElement('language'),
      'partner_code' => $oCookie->getElement('partner'),
      });
    $oMessage->load('tell_a_friend__message.thtml');

    $oMessage->tags
        ({
        'user_name' => $sUser_name,
        'nUser_ID' => $nUser_ID,
        'user_email' => $sUserEmail,
        'friend_name' => $sName
        });

    return $oMessage->get;
}

sub display_form {
    my $oCGI = shift;
    my $oCookie = shift;
    my $oForm = new XDrive::Template
      ({
      'language'     => $oCookie->getElement('language'),
      'partner_code' => $oCookie->getElement('partner'),
      });
    $oForm->load('tell_a_friend.thtml');
    my $numFriends = $oCGI->param("numFriends");

    ##construct the html for multiple input fields
    my $inputFields='';

    for (my $i=1; $i<=$numFriends ; $i++)
    {
      $inputFields = $inputFields . &get_formfield($i,$oCookie);
```

```
    }

    $oForm->tags
        ({
      'friendsToTell' => $inputFields,
      'numFriends' => $numFriends,
        });
    print $oCGI->header, $oForm->get;
    exit(0);
}

sub display_thank_you {
    my $oCGI = shift;
    my $oCookie = shift;
    my $oForm = new XDrive::Template
      ({
      'language'     => $oCookie->getElement('language'),
      'partner_code' => $oCookie->getElement('partner'),
      });
    $oForm->load('tell_a_friend__t_y.thtml');
    print $oCGI->header, $oForm->get;
    exit(0);
}
```


BNSDOCID: <WO 0133381A1 >

###web_unauthorized.cgi

```
#!/usr/bin/perl
# Written by Martin Hald <mhald@uci.edu> on Sat Feb 13, 1999
#
# Program for showing unauthorized information and allowing the users to
# re-login and possibly showing them a "forgot your password?" link.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI qw(header param);
use CGI::Carp qw(fatalsToBrowser);
# use XDrive::CGI qw(:MAIN);
use XDrive::Client::Registration;
use XDrive::Template;
use XDrive::Error;

exit &main;

sub main
      {
      my $oCGI = CGI->new();

      my $oLayout = new XDrive::Template;
      my $oContent = new XDrive::Template;
      my $oNavigation = new XDrive::Template;

      $oLayout->partner('xdrv');
      $oContent->partner('xdrv');
      $oNavigation->partner('xdrv');

      $oLayout->load('layout.thtml');
      $oNavigation->load('front_nav.thtml');

      ## Get the error key
      my $sError = $oCGI->param('error');

      ##now get the error message associated with that error
      my $oErr = new XDrive::Error;
      my $message = $oErr->ReturnMessageGivenCode($sError);

      ## Load the required template HTML files.
      my $oForm = new XDrive::Template;
      $oForm->partner('xdrv');
      $oForm->load("front_nav.thtml");
      $oContent->load("unauthorized.thtml");

      ## Update the layout
      $oLayout->tags
            ({
            'header_graphic' => 'header_denied.gif'
            });

      ## Update the content
      $oContent->tags
            ({
            'error_message' => $message
            });
      $oContent->clear();
```

```
    ## Print out the HTML and exit
    $oLayout->tags
          ({
          'content' => $oContent->get,
          'navigation' => $oNavigation->get,
          'title' => 'Authorization Denied'
          });
    print header(), $oLayout->get;

    return 0;
}
```

Windows Client Code

// Module: dlgShareAFile.h 1
// Module: dlgShareAFile.h 3
// Module: xdBase64.cpp 5
// Module: xdBase64.h 9
// Module: xdGlobals.h 10
// Module: xdParseDate.h 13
// Module: xdRegistry.h 14
// Module: xdTokens.h 16
// Module: xdTools.h 17
// Module: xdEngine.h 20
// Module: tdimsgtbl.h 22
// Module: tdisock.h 24
// Module: xdFileIO.cpp 41
// Module: xdDebugger.cpp 45

```
//
// Module: dlgShareAFile.h
// Subsystem: KnoWare Internet Engine (kwEngine.dll)
// Contents: Declaration module for the dlgShareAFile class.
//
// --------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// --------------------------------------------------------------------
// --------------------------------------------------------------------
//

#include "stdafx.h"
#include <xdGlobals.h>

#ifndef _VXD_SOURCE_
#include "resource.h"
#endif
#include "dlgShareAFile.h"

#ifdef _DEBUG
#undef THIS_FILE
static char THIS_FILE[] = __FILE__;
#endif

// --------------------------------------------------------------------
// Implementation
// --------------------------------------------------------------------
BEGIN_MESSAGE_MAP(dlgShareAFile, CDialog)
        //{{AFX_MSG_MAP(dlgShareAFile)
        //}}AFX_MSG_MAP
END_MESSAGE_MAP()

// --------------------------------------------------------------------
// Method: dlgShareAFile()
// Purpose: Standard constructor
//
dlgShareAFile::dlgShareAFile(CWnd* pParent /*=NULL*/)
        : CDialog(dlgShareAFile::IDD, pParent)
{
        //{{AFX_DATA_INIT(dlgShareAFile)
        m_sFileName = szEMPTY;
        m_sFileDescription = szEMPTY;
        m_sEmailMessage = szEMPTY;
        m_sEmailSubject = szEMPTY;
        m_sEmail0 = szEMPTY;
        m_sEmail1 = szEMPTY;
        m_sEmail2 = szEMPTY;
        m_sEmail3 = szEMPTY;
        m_sEmail4 = szEMPTY;
        //}}AFX_DATA_INIT
} // End of dlgShareAFile()

// --------------------------------------------------------------------
// Method: DoDataExchange()
// Purpose: Standard data exchange handler
//
void dlgShareAFile::DoDataExchange(CDataExchange* pDX)
{
```


RNSDOCID: <WO 0133381A1 | >

```
        CDialog::DoDataExchange(pDX);
        //{{AFX_DATA_MAP(dlgShareAFile)
        DDX_Text(pDX, IDC_SHARE_FILENAME, m_sFileName);
        DDX_Text(pDX, IDC_SHARE_FILEDESC, m_sFileDescription);
        DDX_Text(pDX, IDC_SHARE_EMAILMSG, m_sEmailMessage);
        DDX_Text(pDX, IDC_SHARE_EMAILSUB, m_sEmailSubject);
        DDX_Text(pDX, IDC_SHARE_EMAIL1, m_sEmail0);
        DDX_Text(pDX, IDC_SHARE_EMAIL2, m_sEmail1);
        DDX_Text(pDX, IDC_SHARE_EMAIL3, m_sEmail2);
        DDX_Text(pDX, IDC_SHARE_EMAIL4, m_sEmail3);
        DDX_Text(pDX, IDC_SHARE_EMAIL5, m_sEmail4);
        //}}AFX_DATA_MAP
} // End of DoDataExchange()

// ---------------------------------------------------------------------------
// Method: OnInitDialog()
// Purpose: Called to initialize the contents of the dialog
//
BOOL dlgShareAFile::OnInitDialog()
{
        CDialog::OnInitDialog();

        UpdateData(FALSE);
        return TRUE;  // return TRUE unless you set the focus to a control
                // EXCEPTION: OCX Property Pages should return FALSE
} // End of OnInitDialog()

// ---------------------------------------------------------------------------
// Method: OnOK()
// Purpose: Called to close out the dialog.
//
void dlgShareAFile::OnOK()
{
        UpdateData(TRUE);
        CDialog::OnOK();
} // End of OnOK()
```


ENSDOCID: <WO 0133381A1 >

```
//
// Module: dlgShareAFile.h
// Subsystem: KnoWare Internet Engine (kwEngine.dll)
// Contents: Declaration module for the dlgShareAFile class.
//
// --------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// --------------------------------------------------------------------
// --------------------------------------------------------------------
//
#if !defined(_INC_DLGSHAREAFILE_H_)
#define _INC_DLGSHAREAFILE_H_

#if _MSC_VER > 1000
#pragma once
#endif // _MSC_VER > 1000

#ifndef _VXD_SOURCE_
#include "resource.h"
#endif

#ifndef _VXD_SOURCE_

// --------------------------------------------------------------------
//        dlgShareAFile dialog class
//
class dlgShareAFile : public CDialog
{
public:
        dlgShareAFile(CWnd* pParent = NULL);  // standard constructor

        //{{AFX_DATA(dlgShareAFile)
        enum { IDD = IDD_SHARE };
        CString  m_sFileName;
        CString  m_sFileDescription;
        CString  m_sEmailMessage;
        CString  m_sEmailSubject;
        CString  m_sEmail0;
        CString  m_sEmail1;
        CString  m_sEmail2;
        CString  m_sEmail3;
        CString  m_sEmail4;
        //}}AFX_DATA

        //{{AFX_VIRTUAL(dlgShareAFile)
        protected:
        virtual void DoDataExchange(CDataExchange* pDX);   // DDX/DDV support
        //}}AFX_VIRTUAL

protected:
        //{{AFX_MSG(dlgShareAFile)
        virtual BOOL OnInitDialog();
        virtual void OnOK();
        //}}AFX_MSG
        DECLARE_MESSAGE_MAP()
};

//{{AFX_INSERT_LOCATION}}
```

```
// Microsoft Visual C++ will insert additional declarations immediately before the previous line.

#endif

#endif // !defined(_INC_DLGSHAREAFILE_H_)
```


INSDOCID: <WO_____0133381A1_I_>

```
//
// Module: xdBase64.cpp
// Subsystem: X:drive Client Engine (xdEngine.dll)
// Contents: Implementation module for the xdBase64 class
//
// ----------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ----------------------------------------------------------------------
// ----------------------------------------------------------------------
//
#include "stdafx.h"
#include "xdBase64.h"

#ifdef _DEBUG
#undef THIS_FILE
static char THIS_FILE[]=__FILE__;
#endif
#ifdef _VXD_SOURCE_
#include <xdEngine.h>
#define TRACE  DEBUG_DPRINTF
#endif

// Static Member Initializers
//

// The 7-bit alphabet used to encode binary information
CString xdBase64::m_sBase64Alphabet =
_T( "ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789+/" );

int xdBase64::m_nMask[] = { 0, 1, 3, 7, 15, 31, 63, 127, 255 };

// ----------------------------------------------------------------------
// Method: xdBase64()
// Purpose: Standard Constructor
//
xdBase64::xdBase64 ( void )
{
} // End of xdBase64()

// ----------------------------------------------------------------------
// Method: ~xdBase64()
// Purpose: Standard destructor
//
xdBase64::~xdBase64()
{
} // End of ~xdBase64()

// ----------------------------------------------------------------------
// Method: Encode()
// Purpose: Encodes a string
//
CString xdBase64::Encode(LPCTSTR szEncoding, int nSize)
{
        CString sOutput = _T( "" );
        int nNumBits = 6;
        UINT nDigit;
        int lp = 0;
```


BNSDOCID: <WO 0133381A1 | >

```
        ASSERT( szEncoding != NULL );
        if( szEncoding == NULL )
                return sOutput;
        m_szInput = szEncoding;
        m_nInputSize = nSize;

        m_nBitsRemaining = 0;
        nDigit = read_bits( nNumBits, &nNumBits, lp );
        while( nNumBits > 0 )
        {
                sOutput += m_sBase64Alphabet[ (int)nDigit ];
                nDigit = read_bits( nNumBits, &nNumBits, lp );
        }
        // Pad with '=' as per RFC 1521
        while( sOutput.GetLength() % 4 != 0 )
        {
                sOutput += '=';
        }
        return sOutput;
} // End of Encode()

// ------------------------------------------------------------------
//  Method: Decode()
// Purpose: Decodes data
//  Notes: The size of the output buffer must not be less than 3/4 the
//                          size of the input buffer. For simplicity, make them the same
//                          size.
//
int xdBase64::Decode(LPCTSTR szDecoding, LPTSTR szOutput)
{
        CString sInput;
  int c, lp =0;
        int nDigit;
  CString         strDecode;
        int* pDecode = (int*)strDecode.GetBuffer(256*sizeof(int));

        ASSERT( szDecoding != NULL );
        ASSERT( szOutput != NULL );
        if( szOutput == NULL )
                return 0;
        if( szDecoding == NULL )
                return 0;
        sInput = szDecoding;
        if( sInput.GetLength() == 0 )
                return 0;

        // Build Decode Table
        //
        for( int i = 0; i < 256; i++ )
                pDecode[i] = -2; // Illegal digit
        for( i=0; i < 64; i++ )
        {
                pDecode[ m_sBase64Alphabet[ i ] ] = i;
                pDecode[ m_sBase64Alphabet[ i ] | 0x80 ] = i; // Ignore 8th bit
                pDecode[ '=' ] = -1;
                pDecode[ '=' | 0x80 ] = -1; // Ignore MIME padding char
}

      // Clear the output buffer
      memset( szOutput, 0, sInput.GetLength() + 1 );

      // Decode the Input
```


3NSDOCID: <WO_____0133381A1_I. >

```
        //
        for( lp = 0, i = 0; lp < sInput.GetLength(); lp++ )
        {
                c = sInput[ lp ];
                nDigit = pDecode[ c & 0x7F ];
                if( nDigit < -1 )
                {
                        return 0;
                }
                else if( nDigit >= 0 )
                        // i (index into output) is incremented by write_bits()
                        write_bits( nDigit & 0x3F, 6, szOutput, i );
    }
        return i;
} // End of Decode()

// ----------------------------------------------------------------------
//  Method: read_bits()
// Purpose: dunno
//
UINT xdBase64::read_bits(int nNumBits, int * pBitsRead, int& lp)
{
    ULONG lScratch;
    while( ( m_nBitsRemaining < nNumBits ) &&
                        ( lp < m_nInputSize ) )
        {
                int c = m_szInput[ lp++ ];
      m_lBitStorage <<= 8;
      m_lBitStorage |= (c & 0xff);
                m_nBitsRemaining += 8;
    }
    if( m_nBitsRemaining < nNumBits )
        {
                lScratch = m_lBitStorage << ( nNumBits - m_nBitsRemaining );
                *pBitsRead = m_nBitsRemaining;
                m_nBitsRemaining = 0;
    }
        else
        {
                lScratch = m_lBitStorage >> ( m_nBitsRemaining - nNumBits );
                *pBitsRead = nNumBits;
                m_nBitsRemaining -= nNumBits;
    }
    return (UINT)lScratch & m_nMask[nNumBits];
} // End of read_bits()

// ----------------------------------------------------------------------
//  Method: write_bits()
// Purpose: dunno
//
void xdBase64::write_bits ( UINT nBits, int nNumBits, LPTSTR szOutput, int& i )
{
        UINT nScratch;

        m_lBitStorage = (m_lBitStorage << nNumBits) | nBits;
        m_nBitsRemaining += nNumBits;
        while( m_nBitsRemaining > 7 )
        {
                nScratch = m_lBitStorage >> (m_nBitsRemaining - 8);
                szOutput[ i++ ] = (TCHAR)(nScratch & 0xFF);
                m_nBitsRemaining -= 8;
        }
```


BNSDOCID: <WO 0133381A1_I_>

```
} // End of write_bits()
```


NSDOCID: <WO_____0133381A1_I_>

```
//
// Module: xdBase64.h
// Subsystem: X:drive Client Engine (xdEngine.dll)
// Contents: Declaration module for the xdBase64 class.
//
// ------------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ------------------------------------------------------------------------
// ------------------------------------------------------------------------
//
#if !defined(_INC_XDBASE64_H_)
#define _INC_XDBASE64_H_

#ifdef _VXD_SOURCE_
        #include <xdCString.h>
#endif

#if _MSC_VER >= 1000
#pragma once
#endif // _MSC_VER >= 1000

// ------------------------------------------------------------------------
// xdBase64 encoder class
//
class xdBase64
{
public:
        xdBase64 ( void );
        virtual ~xdBase64 ( void );

        virtual int             Decode ( LPCTSTR szDecoding, LPTSTR szOutput );
        virtual CString Encode ( LPCTSTR szEncoding, int nSize );

protected:
        void            write_bits ( UINT nBits, int nNumBts, LPTSTR szOutput, int& lp );
        UINT            read_bits ( int nNumBits, int* pBitsRead, int& lp );

protected:
        int                     m_nInputSize;
        int                     m_nBitsRemaining;
        ULONG           m_lBitStorage;
        LPCTSTR         m_szInput;
        static int m_nMask[];
        static CString  m_sBase64Alphabet;
};

#endif // !defined(_INC_XDBASE64_H_)
```

/

```
// Module: xdGlobals.h
// Subsystem: X:drive
// Contents: Global definitions used throughout the system
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//
#ifndef _INC_XDGLOBALS_H_
#define _INC_XDGLOBALS_H_

#ifdef _VXD_SOURCE_

        //
        // This HodgePodge helps us to be able to compile all of our code
        // under Ring-3 and Ring-0 without too much modification.
        //
        #ifndef USE_NDIS
                #define USE_NDIS
        #endif

        #include <vtoolscp.h>                   // VToolsD main header file

        #ifndef LPCTSTR
                typedef char                    TCHAR;
                typedef unsigned char   _TUCHAR;
                typedef const TCHAR*    LPCTSTR;
                typedef TCHAR*                  LPTSTR;
                typedef unsigned char   BYTE;
                typedef BYTE*                   LPBYTE;
                typedef DSKTLSYSTEMTIME SYSTEMTIME;
                typedef HANDLE                          HINSTANCE;
                #define _T(x)                   (x)
        #endif

        #ifndef BASED_CODE
                #define BASED_CODE
        #endif

        #ifndef INVALID_HANDLE_VALUE
                #define INVALID_HANDLE_VALUE (HANDLE)-1
        #endif

        #define _tcsstr         strstr          // Standard unicode mappings
        #define _tcslen         strlen
        #define _tcscpy         strcpy
        #define _tcsrchr        strrchr
        #define _tcscat         strcat
        #define _ttoi           atoi
        #define _ttol           atol
        #define _tcsrev         strrev
        #define _tcschr         strchr
        #define _tcsncpy        strncpy
        #define _tcspbrk        strpbrk
        #define _stprintf       sprintf
        #define _tcslwr         strlwr
```

```
        #define _tcsupr         strupr
        #define _tcsicmp        stricmp
        #define _tcscmp         strcmp
        #define _tcscoll  strcmp
        #define _istdigit  isdigit
//      #define ASSERT Assert
        typedef HANDLE          HWND;
#endif

// ------------------------------------------------------------------
// Setup a whole bunch of constants that we can use throughout the systems
//
#define  chNL                   _T('\n')
#define chCOMMA                         _T(',')
#define chDOSSLASH              _T('\\')
#define chUNIXSLASH             _T('/')
#define chQUOTE                         _T('\'')
#define chDQUOTE                _T('\"')
#define chPERIOD                _T('.')
#define chBAR                   _T('|')
#define chTAB                   _T('\t')
#define chCR                    _T('\r')
#define chSPACE                         _T(' ')
#define chCOLON                         _T(':')
#define chSEMICOLON             _T(';')
#define chDASH                  _T('-')
#define chPLUS                  _T('+')
#define chPERCENT               _T('%')
#define chOPENBRACKET           _T('[')
#define chCLOSEBRACKET          _T(']')
#define chNUL                   _T('\0')
#define chZERO                  _T('0')
#define chONE                   _T('1')
#define chTWO                   _T('2')
#define chTHREE                         _T('3')
#define chFOUR                  _T('4')
#define chFIVE                  _T('5')
#define chSIX                   _T('6')
#define chSEVEN                         _T('7')
#define chEIGHT                 _T('8')
#define chNINE                  _T('9')
#define chOPENPAREN             _T('(')
#define chCLOSEPAREN _T(')')
#define chAT                    _T('@')

#define szNL                    _T("\n")
#define szCOMMA                         _T(",")
#define szDOSSLASH              _T("\\")
#define szUNIXSLASH             _T("/")
#define szQUOTE                         _T("'")
#define szDQUOTE                _T("\"")
#define szPERIOD                _T(".")
#define szBAR                   _T("|")
#define szTAB                   _T("\t")
#define szCR                    _T("\r")
#define szSPACE                 _T(" ")
#define szCOLON                         _T(":")
#define szSEMICOLON             _T(";")
#define szDASH                  _T("-")
#define szPLUS                  _T("+")
#define szOPENBRACKET           _T("[")
#define szCLOSEBRACKET          _T("]")
```

```
#define szAT                    _T("@")
#define szEMPTY                         _T("")
#define szCURRENTDIR _T(".")
#define szPARENTDIR             _T("..")
#define szFTP_DOT               _T("ftp.")
#define szFTP_SLASH             _T("ftp://")
#define szOPENPAREN             _T("(")
#define szCLOSEPAREN _T(")")

#define  XD_CACHE_BASEDIR  _T("xdcache")
#define XD_LOGFILE_NP                   _T("xdrive.log")
#define XD_LOGFILE_VXD                  _T("xdrivevxd.log")

// ------------------------------------------------------------------------
// We need to define the scope of values which will be used in the system.
// They are defined here since we need to read/write these to the registry.
//

//
// General defines
//
#define XD_LEN_32                       32
#define XD_LEN_64                       64
#define XD_LEN_128                      128
#define  XD_LEN_256                     256
#define XD_LEN_512                      512
#define XD_LEN_1024                     1024
#define XD_LEN_2048                     2048

//
// these program IDs are also the 1st two digits of the registration number
//
#define XD_PROGID_XDRIVE 0x53       // {DB2112AD-0000-0000-0053-000004281965}


//
// IN will generate a directory listing and the local file that contains
// that information will have an extension of `.fnd`. For example, if
// IN/FND does a directory listing of ftp.microsoft.com/softlib/mslfiles,
// it will place the raw directory listing in the in the local IN cache
// directory (which is currently defined as hanging off of the same
// directory where IN is located) as
//
// c:\xdCache\ftp.microsoft.com\root.softlib.mslfiles.ls
//
// and the parsed FND formatted data will be placed into
//
// c:\xdCache\ftp.microsoft.com\root.softlib.mslfiles.fnd
//
// the .fnd file is parsed out to produce the information returned as a
// result of the FINDFIRST()/FINDNEXT() calls to the NP.
//
#define XD_FILEEXT_LS               _T(".ls")
#define  XD_FILEEXT_XDR             _T(".fnd")
//
// Here is our Network Provider Name
//
#define  XD_PROVIDER_NAME                   _T("Xdrive")
#define XD_PROVIDER_NETID                   0x00120000

#endif // _INC_XDGLOBALS_H_
```

```
//
// Module: xdParseDate.h
// Subsystem: X:drive Tools Library (xdTools.dll)
// Contents: Declaration module for the CParseDate utility class
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//
#ifndef _INC_XDPARSEDATE_H_
#define _INC_XDPARSEDATE_H_

#include <xdTokens.h>

class XDTOOLS_PUBLIC CParseDate
{
public:
        CParseDate ( void );
        ~CParseDate ( void );

        BOOL            Parse ( LPCTSTR s );

        int                     m_iYear;
        int                     m_iMonth;
        int                     m_iDay;
        int                     m_iHour;
        int                     m_iMinute;
        int                     m_iSecond;
        TCHAR           m_szDate[64];
        TCHAR           m_szTime[32];
        TCHAR           m_szOrig[64];

private:
        BOOL            isNUM ( LPCTSTR s );
        BOOL            isDOW ( LPCTSTR s );
        xdTokens        m_tokens;
};
#endif
```


PNSDOCID: -WO 01333381A1 I >

```
//
// Module: xdRegistry.h
// Subsystem: X:drive Tools Library (xdTools.dll)
// Contents: Declaration module for the xdRegistry utility class
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//
#ifndef _INC_XDREGISTRY_H_
#define _INC_XDREGISTRY_H_

#if _MSC_VER >= 1000
#pragma once
#endif // _MSC_VER >= 1000

#include <xdGlobals.h>          // X:drive system wide globals
#include <xdTools.h>            // X:drive Tools Related

// ---------------------------------------------------------------------
// xdRegistry
// the registry class encapsulates the regitry functions. You must open
// at least a hive in the constructor. then you can optionally open
// a subkey & read/write information to the registry. All methods will return
// true upon successful completion. false will be returned if an error
// has occurred.
//
class XDTOOLS_PUBLIC xdRegistry
{
public:
   xdRegistry();
   ~xdRegistry();

//
// public interface
//
public:
   BOOL      RegOpenRead ( HKEY hHive, LPCTSTR szSubKey );
   BOOL      RegOpenWrite ( HKEY hHive, LPCTSTR szSubKey );
   BOOL      RegClose ( void );
         BOOL            RegDeleteKey ( HKEY hHive, LPCTSTR szSubKey );
         BOOL            RegDeleteValue ( LPCTSTR szVal );

   BOOL                  RegEnumKey ( int i, LPCTSTR szKeyName, UINT uiLenWithNull );
   BOOL                  RegEnumVal ( int i, LPCTSTR szValName, UINT uiLenWithNull, LPCTSTR
szValData, UINT uiDataLenWithNull );
         BOOL            RegEnumStr ( int i, LPCTSTR szVal, UINT uiLenWithNull );
         BOOL      RegGetStr ( LPCTSTR sName, LPCTSTR szVal, UINT uiLenWithNull );
   BOOL      RegPutStr ( LPCTSTR sName, LPCTSTR szVal );
         BOOL            RegPutBin ( LPCTSTR sName, BYTE* pBuffer, UINT uiLen );

   BOOL      RegGetNum ( LPCTSTR sName, BOOL& bVal );
   BOOL      RegGetNum ( LPCTSTR sName, WORD& wVal );
   BOOL      RegGetNum ( LPCTSTR sName, DWORD& dwVal );
   BOOL      RegGetNum ( LPCTSTR sName, UINT& uiVal );

   BOOL      RegPutNum ( LPCTSTR sName, DWORD dwVal );
```


ENSDOCID <WO 0133381A1 I >

```
        LONG            RegGetLastError ( void );

private:
   HKEY      m_hKey;        // the current open hive
   LONG              m_lRetCode;    // the last return code
}; // End of xdRegistry

#endif // _INC_XDREGISTRY_H_
```

```
//
// Module: xdTokens.h
// Subsystem: X:drive Tools Library (xdTools.dll)
// Contents: Declaration module for xdTokens utility class
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//
#ifndef _INC_XDTOKENS_H_
#define _INC_XDTOKENS_H_

#if _MSC_VER >= 1000
#pragma once
#endif // _MSC_VER >= 1000

#include <xdGlobals.h>          // X:drive system wide globals
#include <xdTools.h>            // X:drive Tools Related

#define XD_MAX_TOKENS    1024

//---------------------------------------------------------------------
// xdTokens
//      This class is a big worker class. its used to parse strings into
// tokens or substrings. Strings are parsed by supplying a string of
// characters which will be used to parse out the string.
//

class XDTOOLS_PUBLIC xdTokens
{
public:
   xdTokens(LPCTSTR pTokens = NULL);
   ~xdTokens();

//
// Public Interface
//
public:
        int             Parse(int iNumToParse, LPCTSTR pString, LPCTSTR pTokens=NULL);
        int             Parse(LPCTSTR pString, LPCTSTR pTokens=NULL);
        LPCTSTR         operator[](int iIndex);

//
// Private Members
//
private:
        LPCTSTR         *m_pTok;
        int             m_iNumParsed;
        LPTSTR          m_szWorkString;
        LPTSTR          m_szTokens;
        LPTSTR          m_pWorkString;
}; // End of xdTokens

#endif // _INC_XDTOKENS_H_
```


3NSDOCID: <WO 0133381A1 >

```
//
// Module: xdTools.h
// Subsystem: X:drive Tools Library (xdTools.dll)
// Contents: Main header file for the xdTools library
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//
#ifndef _INC_XDTOOLS_H_
#define _INC_XDTOOLS_H_

#if _MSC_VER >= 1000
#pragma once
#endif // _MSC_VER >= 1000

#include <xdGlobals.h>          // X:drive system wide globals
#ifdef _VXD_SOURCE_
#include <xdCString.h>
#endif
#pragma warning (disable : 4100)
#pragma warning (disable : 4201)

//
// The following code block will insure the proper resolution of any
// API functions (and classes) which are exposed from the XDTOOLS library.
// When compiling the XDTOOLS library source code, make sure that the
// following #define is defined in the project settings (both debug & release).
// This will cause any classes and/or API functions defined as to
// be exported to the LIB file. If you are USING the library by linking to
// the XDTOOLS.LIB or XDTOOLSD.LIB import libraries, then ignore the
// following #define's for
//
#ifdef _XDTOOLS_SOURCE_
        #define XDTOOLS_PUBLIC __declspec( dllexport )
#else
        #define XDTOOLS_PUBLIC // __declspec( dllimport )
#endif // _XDTOOLS_SOURCE_

//
// If we are debugging & we trap an exception, we will display it
// in a message box, otherwise in release mode, we wont.
//
#ifdef _DEBUG
        #define XDTRACE(x) AfxMessageBox(x)
#else
        #define XDTRACE(x) TRACE0(x)
#endif

// ---------------------------------------------------------------------
// XDDATE API (Date Functions)
//
XDTOOLS_PUBLIC int XDDATE_MonthNum ( LPTSTR szMonth );

// ---------------------------------------------------------------------
// XDSTR API (String Functions)
//
```

```
XDTOOLS_PUBLIC      LPTSTR          XDSTR_Squish ( LPTSTR p );
XDTOOLS_PUBLIC      LPTSTR          XDSTR_StripChar ( LPTSTR p, TCHAR c );
XDTOOLS_PUBLIC      LPTSTR          XDSTR_DirSlashAdd ( LPTSTR sz, TCHAR c );
XDTOOLS_PUBLIC      LPTSTR          XDSTR_DirSlashRemove ( LPTSTR sz, TCHAR c );
XDTOOLS_PUBLIC      LPTSTR          XDSTR_TrimRight ( LPTSTR );
XDTOOLS_PUBLIC      LPTSTR          XDSTR_TrimLeft ( LPTSTR );
XDTOOLS_PUBLIC      LPTSTR          XDSTR_Trim ( LPTSTR );
XDTOOLS_PUBLIC      BOOL    XDAPI_CreatePath ( LPCTSTR ); // calls CreateDirectory() to make a path.

// ------------------------------------------------------------------
// Stuff for messge boxes
//
#ifndef _VXD_SOURCE_
        int             XDTOOLS_PUBLIC XD_MSG ( LPCTSTR szText, UINT uiMsgFlags );
        int             XDTOOLS_PUBLIC XD_QUESTION ( LPCTSTR szText, UINT uiMsgFlags );
        LPCTSTR XDTOOLS_PUBLIC XD_TEXT ( HINSTANCE h, UINT uiResId ); // LOADS A
RESOURCE!
        BOOL    XD_DoHelp ( LPHELPINFO );
        void    XD_DoHelpContext ( CWnd* );
#endif

//
// the calling object needs to supply the resource
// handle for loading the string. So set up a stupid macro
// that will automatically supply this!
//
#define XD_LOADSTRING(x)    XD_TEXT(AfxGetResourceHandle(),(x))

//
// DEBUGGING STUFF
//
#define CATCH_MSG _T("Caught Exception in File %s, Line %d\n\n")
#ifdef _VXD_SOURCE_
        #define XDCATCH dprintf(CATCH_MSG, _T(__FILE__), __LINE__ )
#else
        #define  XDCATCH {    CString s; s.Format(CATCH_MSG, _T(__FILE__), __LINE__ );
AfxMessageBox(s); }
#endif

//
// Ring 0 File I/O
//
#ifdef _VXD_SOURCE_
#define GENERIC_READ                    (0x80000000) /* from WINNT.H */
#define GENERIC_WRITE                   (0x40000000) /* from WINNT.H */
#define CREATE_NEW                      1
#define CREATE_ALWAYS                   2
#define OPEN_EXISTING                   3
#define OPEN_ALWAYS                     4
#define TRUNCATE_EXISTING       5
#define FILE_SHARE_READ                 0x00000001
#define FILE_SHARE_WRITE        0x00000002
#define FILE_SHARE_DELETE       0x00000004      // not supported

HANDLE CreateFile ( LPCTSTR lpFileName,     // pointer to name of the file
                                DWORD dwDesiredAccess,    // access (read-write) mode
                                DWORD dwShareMode,        // share mode
                                void* lpSecAtt,                         // pointer to security
attributes

                                DWORD dwCreateFlags,            // how to create
                                DWORD dwFlagsAndAttributes,  // file attributes
                                HANDLE);
```


ISDOCID: <WO_____0133381A1_I_>

```
BOOL CloseHandle ( HANDLE hFile );
BOOL ReadFile ( HANDLE hFile,           // handle of file to read
                void* lpBuffer,         // pointer to buffer that receives data
                DWORD nNumberOfBytesToRead,  // number of bytes to read
                DWORD* lpNumberOfBytesRead, // pointer to number of bytes read
                void* lpOverlapped);   // pointer to structure for data

BOOL ReadFileLine ( HANDLE hFile,                    // handle of file to read
                    BYTE* lpBuffer,                  // pointer to buffer that receives
data
                    DWORD dwBytesToRead,             // number of bytes to read
                    DWORD* dwBytesRead,              // pointer to number of bytes read
                    DWORD* dwOffset);                // pointer to structure for data

BOOL WriteFile ( HANDLE hFile, LPCTSTR lpBuffer, DWORD dwBytesToWrite,
                 DWORD* pBytesWritten, void* p);

DWORD       GetFileSize ( HANDLE hFile, DWORD* pdwHigh );
#endif

#endif // !defined(_INC_XDTOOLS_H_)
```

```
//
// Module: xdEngine.h
// Subsystem: X:drive Client Engine (xdEngine.dll)
// Contents: Main include file for the xdEngine subsystem
//
// ------------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ------------------------------------------------------------------------
// ------------------------------------------------------------------------
//
#ifndef _INC_XDRIVE_ENGINE_H_
#define _INC_XDRIVE_ENGINE_H_

#if _MSC_VER >= 1000
#pragma once
#endif // _MSC_VER >= 1000

#pragma warning (disable : 4100)
#pragma warning (disable : 4201)

#ifdef _XDENGINE_SOURCE_
        #define XDAPI_PUBLIC __declspec( dllexport )
#else
        #define XDAPI_PUBLIC // __declspec( dllimport )
#endif // _XDENGINE_SOURCE_

#pragma pack(1) // byte pack this thing!

#include <xdGlobals.h>

// ------------------------------------------------------------------------
// XD_DIRENTRY - directory listing item
//
//      The following structure is used to hold an object in the file listing
// file. Xdrive will generate the file list for the directory and store it
// in the cache directory. That file will contain
// a list of record structures of this type. The .mnd file is generated
// based upon the FTP server specific format in the .idx file in the same
// cache directory.
//
typedef struct _xd_direntry_
{
        USHORT          cb;             // class size, MUST BE FIRST!!!!
  DWORD         dwFileAttributes;
        FILETIME        ftCreationTime;
  FILETIME      ftLastAccessTime;
  FILETIME      ftLastWriteTime;
  DWORD         nFileSizeHigh;
        DWORD           nFileSizeLow;
  TCHAR         cFileName[ XD_LEN_512 ];
        TCHAR           m_szObPerms [ XD_LEN_32 + 1 ];
        BYTE            m_bObOwnerPerms[4];
        BYTE            m_bObGroupPerms[4];
        BYTE            m_bObWorldPerms[4];
} XD_DIRENTRY, * LPXD_DIRENTRY;

#pragma pack()
```


\SDOCID: <WO_____0133381A1_I_>

```
//
// Return codes
//
typedef UINT    XD_RETCODE;

#define XD_SUCCESS                          (int)0
#define XD_CANCEL                           (int)1
#define XD_ERR_CONNECTFAILED        (int)2          // socket connect failed
#define XD_ERR_LOGINFAILED          (int)3          // bad username/pwd
#define XD_ERR_CONNECTREFUSED       (int)5          // socket connect refused
#define XD_ERR_CANTRESOLVEHOST      (int)6          // cant resolve host
#define XD_ERR_SERVERUPGRADING      (int)7          // upgrading our servers

#define XD_ERR_OTHER                        (int)-1

//
// The following constants are used in the notification structure.
//
typedef enum
{
        XD_NOTIFY_IDLE                      = 0,        // nothing happening here
        XD_NOTIFY_STATUS_MSG        = 1000,         // status msg
        XD_NOTIFY_XFERDATA_DN       = 1001,         // downloading
        XD_NOTIFY_XFERDATA_UP       = 1002,         // uploading
        XD_NOTIFY_QUOTA                     = 1003,     // Update the quota
        XD_NOTIFY_START                     = 1004,     // Start an operation
        XD_NOTIFY_STOP                      = 1005      // Stop an operation
} XD_NOTIFY_CODE;

// ----------------------------------------------------------------
// XD_NOTIFY - This is our notification structure. The http engine
// will use this structure to pass status information back to the
// invoking method.
//
#pragma pack(1)

typedef struct _xd_notification_
{
        int                 m_iNotifyType;
        TCHAR       m_szMessage [ 1024 + sizeof(TCHAR) ];

        //
        // used for send/receive
        //
        ULONG       m_dwStartTime;      // GetTickCount()/1000
        ULONG       m_dwCurrentTime;    // GetTickCount()/1000

        DWORD               m_dwCurrentBytes;
        DWORD               m_dwTotalBytes;

        TCHAR       m_szLocalFileName [ MAX_PATH + sizeof(TCHAR) ];
        TCHAR       m_szRemoteFileName [ MAX_PATH + sizeof(TCHAR) ];
} XD_NOTIFY, *LPXD_NOTIFY;
#pragma pack()
#define XD_NOTIFY_MAX       50

#endif // _INC_XDRIVE_ENGINE_H_
```

```
//
// Module: tdimsgtbl.h
// Subsystem: X:drive Client Engine (xdEngine.dll)
// Contents: TDI Error table.
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by River Front Software
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//

#ifndef __TDIMSGTBL_H
#define __TDIMSGTBL_H

typedef struct
{
        TDI_STATUS    Status;
        int                   WinStatus;
        char          *szMsg;
} INETTDIMSG;

INETTDIMSG TdiMsgTbl[] =
{
        {TDI_SUCCESS, ERROR_SUCCESS, "TDI Success"},
        {TDI_NO_RESOURCES, ERROR_BAD_COMMAND, "No resources."},
        {TDI_ADDR_IN_USE, ERROR_BAD_COMMAND,  "Address already in use."},
        {TDI_BAD_ADDR, ERROR_BAD_COMMAND, "Address given is bad."},
        {TDI_NO_FREE_ADDR, ERROR_BAD_COMMAND, "No addresses available."},
        {TDI_ADDR_INVALID, ERROR_BAD_COMMAND, "Address object is invalid."},
        {TDI_ADDR_DELETED, ERROR_BAD_COMMAND, "Address object was deleted."},
        {TDI_BUFFER_OVERFLOW, ERROR_BAD_COMMAND,  "Buffer overflowed."},
        {TDI_BAD_EVENT_TYPE, ERROR_BAD_COMMAND,   "Bad event type."},
        {TDI_BAD_OPTION, ERROR_BAD_COMMAND,   "Bad option or length."},
        {TDI_CONN_REFUSED, ERROR_BAD_COMMAND, "Connection was refused."},
        {TDI_INVALID_CONNECTION, ERROR_BAD_COMMAND,   "Invalid connection."},
        {TDI_ALREADY_ASSOCIATED, ERROR_BAD_COMMAND,   "Connection already associated."},
        {TDI_NOT_ASSOCIATED, ERROR_BAD_COMMAND,   "Connection not associated."},
        {TDI_CONNECTION_ACTIVE,   ERROR_BAD_COMMAND, "Connection is still active."},
        {TDI_CONNECTION_ABORTED, ERROR_BAD_COMMAND,   "Connection was aborted."},
        {TDI_CONNECTION_RESET, ERROR_BAD_COMMAND, "Connection was reset."},
        {TDI_TIMED_OUT,      ERROR_BAD_COMMAND, "Connection timed out."},
        {TDI_GRACEFUL_DISC,          ERROR_BAD_COMMAND, "Received a graceful disconnect."},
        {TDI_NOT_ACCEPTED, ERROR_BAD_COMMAND, "Data not accepted."},
        {TDI_MORE_PROCESSING, ERROR_BAD_COMMAND,  "More processing required."},
        {TDI_INVALID_STATE, ERROR_BAD_COMMAND, "TCB in an invalid state."},
        {TDI_INVALID_PARAMETER,  ERROR_BAD_COMMAND, "An invalid parameter."},
        {TDI_DEST_NET_UNREACH, ERROR_BAD_COMMAND, "Destination net is unreachable."},
        {TDI_DEST_HOST_UNREACH,  ERROR_BAD_COMMAND, "Dest. host is unreachable."},
        {TDI_DEST_UNREACHABLE, ERROR_BAD_COMMAND, "Dest. is unreachable.  "},
        {TDI_DEST_PROT_UNREACH,  ERROR_BAD_COMMAND, "Destination protocol is unreachable."},
        {TDI_DEST_PORT_UNREACH,  ERROR_BAD_COMMAND, "Dest. port is unreachable."},
        {TDI_INVALID_QUERY,          ERROR_BAD_COMMAND, "Invalid query type specified."},
        {TDI_REQ_ABORTED, ERROR_BAD_COMMAND,  "Request was aborted for some reason."},
        {TDI_BUFFER_TOO_SMALL, ERROR_BAD_COMMAND, "Buffer was too small."},
        {TDI_CANCELLED,      ERROR_BAD_COMMAND, "The request was cancelled."},
        {TDI_BUFFER_TOO_BIG, ERROR_BAD_COMMAND, "Invalid request."},
        {ERROR_SEM_TIMEOUT, ERROR_SEM_TIMEOUT, "Timed out."},
        {TDI_PENDING, ERROR_BAD_COMMAND,  "Pending"}
```


BNSDOCID: <WO_____0133381A1_I_>

```
};

#endif
```


INSDOCID: <WO_____0133381A1_I_>

```
//
// Module: tdisock.h
// Subsystem: X:drive Client Engine (xdEngine.dll)
// Contents: TDI Socket header file.
//
// ------------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by River Front Software
// All rights reserved.
// ------------------------------------------------------------------------
// ------------------------------------------------------------------------
//

#ifndef __TDISOCK_H
#define __TDISOCK_H


#define TDISOCK_TIMEOUT      15000
#define WSADESCRIPTION_LEN     256
#define WSASYS_STATUS_LEN      128
typedef short SHORT;
typedef unsigned short USHORT;
typedef unsigned short ushort;
typedef unsigned int uint;
typedef unsigned long ulong;
typedef unsigned long ULONG;
typedef void (*CTEReqCmpltRtn)(void *Context, long FinalStatus, unsigned int ByteCount);
typedef unsigned char uchar;
typedef struct WSAData {
    WORD            wVersion;
    WORD            wHighVersion;
    char            szDescription[WSADESCRIPTION_LEN+1];
    char            szSystemStatus[WSASYS_STATUS_LEN+1];
    unsigned short  iMaxSockets;
    unsigned short  iMaxUdpDg;
    char FAR *      lpVendorInfo;
} WSADATA;

typedef WSADATA FAR *LPWSADATA;


#define USE_NDIS        1

#include <vtoolscp.h>
#include <crtl.h>

#undef USE_NDIS


#include <tdi.h>
#include <vxdsvc.h>
#include <tdivxd.h>
#include <tdistat.h>

#undef VTDI_Device_ID
#include <vtdi.h>


#define MAKELONG(a, b)     ((LONG)(((WORD)(a)) | ((DWORD)((WORD)(b))) << 16))
#define LOWORD(l)          ((WORD)(l))
```


BNSDOCID: <WO 0133381A1 | >

```
#define HIWORD(l)       ((WORD)(((DWORD)(l) >> 16) & 0xFFFF))
#define LOBYTE(w)       ((BYTE)(w))
#define HIBYTE(w)       ((BYTE)(((WORD)(w) >> 8) & 0xFF))

/*
 * Structures returned by network data base library, taken from the
 * BSD file netdb.h.  All addresses are supplied in host order, and
 * returned in network order (suitable for use in system calls).
 */

struct  hostent {
    char    FAR * h_name;         /* official name of host */
    char    FAR * FAR * h_aliases;  /* alias list */
    short   h_addrtype;           /* host address type */
    short   h_length;           /* length of address */
    char    FAR * FAR * h_addr_list; /* list of addresses */
#define h_addr  h_addr_list[0]        /* address, for backward compat */
};

/***** Wait for semaphore flags */
#define WAIT_SEMA_FLAGS    0 //BLOCK_SVC_INTS | BLOCK_POLL

/***** Macro to call wait on semaphore function */
#define SEMAPHORE_WAIT( hSem, nTimeout )    \
        WaitOnSemaphore( s, hSem, #hSem, nTimeout )


/***** Checks for valid TDI status */
#define TDI_CHECKSTATUS(s)   if ( (s) != TDI_SUCCESS )          \
                                                                {
                \
                                                                errdebug( DBG_log("ERROR - File: %s
Line:%d TDI [%d] - %s\n",          \                                    __FILE__, __LINE__, (s),
MapTdiToString(s)); );             \                            goto Exit;
                                                                        \
                                                                }

/***** Destroys a semaphore */
#define SEMAPHORE_SAFE_DESTROY(hSem)    \
                if (hSem)                                               \
                        {                                                       \
                        vbsdebug( DBG_log("Destroy Semaphore %s", #hSem); ); \
                        UtilSemDestroy(hSem);   \
                        hSem = 0;                                       \
                        }


/***** Signals a semaphore */
#define SEMAPHORE_SAFE_SIGNAL(hSem)      \
                if (hSem)                                       \
                        {                                               \
                        vbsdebug( DBG_log("*** Signal Semaphore %s", #hSem); ); \
                        vbsdebug( DBG_log_hex_long( hSem ); );                  \
                        Signal_Semaphore_No_Switch( hSem );
                \
                        }       \
                else    \
                        {       \
                        vbsdebug( DBG_log("*** NO SEMAPHORE TO SIGNAL %s", #hSem); );   \
                        }
```


NSDOCID: <WO_____0133381A1_I_>

```
/*
 * Basic system type definitions, taken from the BSD file sys/types.h.
 */
typedef unsigned char   u_char;
typedef unsigned short  u_short;
typedef unsigned int    u_int;
typedef unsigned long   u_long;


/*
 * Constants and structures defined by the internet system,
 * Per RFC 790, September 1981, taken from the BSD file netinet/in.h.
 */

/*
 * Protocols
 */
#define IPPROTO_IP          0           /* dummy for IP */
#define IPPROTO_ICMP        1           /* control message protocol */
#define IPPROTO_IGMP        2           /* internet group management protocol */
#define IPPROTO_GGP         3           /* gateway^2 (deprecated) */
#define IPPROTO_TCP         6           /* tcp */
#define IPPROTO_PUP         12          /* pup */
#define IPPROTO_UDP         17          /* user datagram protocol */
#define IPPROTO_IDP         22          /* xns idp */
#define IPPROTO_ND          77          /* UNOFFICIAL net disk proto */

#define IPPROTO_RAW         255         /* raw IP packet */
#define IPPROTO_MAX         256



/*
 * Port/socket numbers: network standard functions
 */
#define IPPORT_ECHO         7
#define IPPORT_DISCARD      9
#define IPPORT_SYSTAT       11
#define IPPORT_DAYTIME      13
#define IPPORT_NETSTAT      15
#define IPPORT_FTP          21
#define IPPORT_TELNET       23
#define IPPORT_SMTP         25
#define IPPORT_TIMESERVER   37
#define IPPORT_NAMESERVER   42
#define IPPORT_WHOIS        43
#define IPPORT_MTP          57

/*
 * Port/socket numbers: host specific functions
 */
#define IPPORT_TFTP         69
#define IPPORT_RJE          77
#define IPPORT_FINGER       79
#define IPPORT_TTYLINK      87
#define IPPORT_SUPDUP       95

/*
 * UNIX TCP sockets
 */
#define IPPORT_EXECSERVER   512
```

```
#define IPPORT_LOGINSERVER    513
#define IPPORT_CMDSERVER      514
#define IPPORT_EFSSERVER      520

/*
 * UNIX UDP sockets
 */
#define IPPORT_BIFFUDP        512
#define IPPORT_WHOSERVER      513
#define IPPORT_ROUTESERVER    520
                        /* 520+1 also used */

/*
 * Ports < IPPORT_RESERVED are reserved for
 * privileged processes (e.g. root).
 */
#define IPPORT_RESERVED       1024

/*
 * Link numbers
 */
#define IMPLINK_IP            155
#define IMPLINK_LOWEXPER      156
#define IMPLINK_HIGHEXPER     158

/*
 * Internet address (old style... should be updated)
 */
struct in_addr {
    union {
        struct { u_char s_b1,s_b2,s_b3,s_b4; } S_un_b;
        struct { u_short s_w1,s_w2; } S_un_w;
        u_long S_addr;
    } S_un;
#define s_addr  S_un.S_addr
                    /* can be used for most tcp & ip code */
#define s_host  S_un.S_un_b.s_b2
                    /* host on imp */
#define s_net   S_un.S_un_b.s_b1
                    /* network */
#define s_imp   S_un.S_un_w.s_w2
                    /* imp */
#define s_impno S_un.S_un_b.s_b4
                    /* imp # */
#define s_lh    S_un.S_un_b.s_b3
                    /* logical host */
};

#define htons(host) ( (((host) & 0xff) << 8) | ((host) >> 8) )
ULONG htonl( ULONG hostlong );

/*
 * Definitions of bits in internet address integers.
 * On subnets, the decomposition of addresses to host and net parts
 * is done according to subnet mask, not the masks here.
 */
#define IN_CLASSA(i)          (((long)(i) & 0x80000000) == 0)
#define IN_CLASSA_NET         0xff000000
#define IN_CLASSA_NSHIFT      24
#define IN_CLASSA_HOST        0x00ffffff
#define IN_CLASSA_MAX         128
```


3NSDOCID: <WO_____0133381A1_I_>

```
#define IN_CLASSB(i)        (((long)(i) & 0xc0000000) == 0x80000000)
#define IN_CLASSB_NET       0xffff0000

// end first 30 pages aj

                        int iMax = i;
                        CString* pArray = new CString[iMax];
                        i=0;
                        while (r1.RegEnumKey(i++,szVal,dwCnt))
                                pArray[i-1] = szVal;
                        r1.RegClose();
                        for (i=0; i<iMax; i++)
                        {
                                CString str = pArray[i];
                                CString strTmp;
                                strTmp.Format(_T("%s\\%s"), (LPCTSTR)szSubKey, (LPCTSTR)str);
                                r1.RegDeleteKey(hHive,strTmp);
                        }
                        delete[] pArray;

                }

                //
                // then Delete the key
                //
                m_lRetCode = ::RegDeleteKey ( hHive, szSubKey );
#endif

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        //
        // bOK is TRUE if ERROR_SUCCESS was returned
        //
        bOK = (ERROR_SUCCESS == m_lRetCode);

        return bOK;
} // End of RegDelete()

// ----------------------------------------------------------------------
//  Method: RegClose()
// Purpose: the the registry is open, close it.
//
BOOL xdRegistry::RegClose ( )
{
        BOOL bOK = TRUE;

#ifndef _VXD_SOURCE_
        try
        {
#endif

                if ( m_hKey != NULL )
                        ::RegCloseKey ( m_hKey );
```

```
#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        //
        // unconditionally null the key
        //
        m_hKey = NULL;

        return bOK;
} // End of RegClose()

// ----------------------------------------------------------------------
//  Method: RegEnumStr()
// Purpose: enumerates subkeys for a key. i is the index to get
//
BOOL xdRegistry::RegEnumStr ( int i, LPCTSTR szValue, UINT uiLenWithNull )
{
        BOOL   bOK = TRUE;
        DWORD          dwIdx = i;
        DWORD          dwSize = (DWORD) uiLenWithNull;
        LPBYTE         pValue = (LPBYTE) szValue;

        //
        // Make sure that the registry is open
        //
        if (m_hKey == NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif
                //
                // initialize the string to be empty
                //
                memset ( pValue, 0, uiLenWithNull );

#ifdef _VXD_SOURCE_
                m_lRetCode = ::RegEnumKey (     m_hKey,                 // hive/key
                                                dwIdx,                  // index
of the key to get
                                                (LPTSTR)pValue,         // key
name will go here
                                                dwSize);        // the size of the
buffer
#else
        #ifdef _UNICODE
                CString sTmp;
                TCHAR szBuf = (BYTE*)sTmp.GetBuffer(512);
                m_lRetCode = ::RegEnumKeyA (m_hKey,             // hive/key
                                                dwIdx,          // index of the
key to get
                                                (char*)buf,     // key name will
go here
                                                dwSize);// the size of the buffer
                CString fred(buf);
```


BNSDOCID: <WO_____0133381A1_I_>

```
                _tcscpy((LPTSTR)szValue,fred);
        #else
                m_lRetCode = ::RegEnumKey (     m_hKey,                 // hive/key
                                                dwIdx,                  // index
of the key to get
                                                (LPTSTR)pValue,         // key
name will go here
                                                dwSize);                // the size of the
buffer
        #endif
#endif

                bOK = (ERROR_SUCCESS == m_lRetCode);
                if (bOK != FALSE)
                {
                        //
                        // terminate the string...ensure that we dont go past
                        // the max lenth of the string!
                        //
                        ((LPTSTR)szValue) [ min(dwSize,uiLenWithNull) ] = 0;
                }

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegEnumStr()

// ----------------------------------------------------------------------
//  Method: RegGetStr()
// Purpose: retrieves a string value from the registry. NOTE: The length
//                      of the string MUST include space for the NULL terminator since
//                      this character IS read from the registry. So, if you want to
//                      read `ABCD` from the registry, supply a uiLenWithNull of five(5).
//
BOOL xdRegistry::RegGetStr ( LPCTSTR szName, LPCTSTR szValue, UINT uiLenWithNull )
{
        BOOL    bOK = TRUE;
        DWORD           dwType = 0;
        DWORD           dwSize  = (DWORD) uiLenWithNull;
        LPBYTE          pValue  = (LPBYTE) szValue;

        //
        // Make sure that the registry is open
        //
        if (m_hKey == NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif
                //
                // initialize the string to be empty
                //
                memset ( pValue, 0, uiLenWithNull );
```


BNSDOCID: <WO_____0133381A1_I_>

```
#ifdef _VXD_SOURCE_
                m_lRetCode = ::RegQueryValueEx (m_hKey,                 // hive/key
                                                (LPTSTR)szName,
        // value name
                                                NULL,
        // reserved
                                                &dwType,
        // the REG_* type
                                                pValue,
        // pointer to the storage area
                                                &dwSize);
        // # to fetch (WITH NULL)
#else
        #ifdef _UNICODE
                char sShort[512];
                char sDefault[512];
                char buf[512];
                BOOL b;
                *sDefault = *sShort=0;
                WideCharToMultiByte     ( CP_ACP, 0, szName, -1, sShort, 512, sDefault, &b );
                m_lRetCode = ::RegQueryValueExA (m_hKey,                // hive/key
                                                sShort,
        // value name
                                                0,
                // reserved
                                                &dwType,
        // the REG_* type
                                                (LPBYTE)buf,    //
pointer to the storage area
                                                &dwSize);
        // # to fetch (WITH NULL)
                CString fred(buf);
                _tcscpy((LPTSTR)szValue,fred);
        #else
                m_lRetCode = ::RegQueryValueEx (m_hKey,                 // hive/key
                                                szName,         // value
name
                                                0,
        // reserved
                                                &dwType,        // the
REG_* type
                                                pValue,         //
pointer to the storage area
                                                &dwSize);       // # to
fetch (WITH NULL)
        #endif
#endif

                bOK = (ERROR_SUCCESS == m_lRetCode);
                if ( bOK == TRUE )
                {
                        //
                        // make sure that it was a string value which was returned.
                        // If not, Delete the entry so we can regen it as a string
                        //
                        if (REG_SZ != dwType)
                                ::RegDeleteValue ( m_hKey, (LPTSTR)szName );

                        //
                        // terminate the string...ensure that we dont go past
                        // the max lenth of the string!
```


BNSDOCID: <WO_____0133381A1_I_>

```
                        //
                        ((LPTSTR)szValue) [ min(dwSize,uiLenWithNull) ] = 0;
                }
#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegGetStr()

// ----------------------------------------------------------------------
//  Method: RegPutStr()
// Purpose: write the information to the registry (write the NULL TOO).
//
BOOL xdRegistry::RegPutStr ( LPCTSTR szName, LPCTSTR szValue )
{
        BOOL   bOK = TRUE;

        //
        // Make sure that the registry is open
        //
        if (m_hKey == NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif


#ifdef _VXD_SOURCE_
                //
                // move everything into a temp buffer so that we can ensure
                // the existance of a NULL byte on the end of the string
                //
                CString sTmp;
                LPTSTR szBuf = sTmp.GetBuffer(512);
                memset ( szBuf, 0, 512 );
                memcpy ( szBuf, szValue, min(sTmp.GetAllocLength()-1,strlen(szValue)) );

                //
                // remember...always write the NULL byte too!
                //
                UINT    uiLenWithNull = strlen(szBuf) + 1;
                m_lRetCode = ::RegSetValueEx (  m_hKey,  (LPTSTR)szName, 0, REG_SZ,
                                                                        (LPBYTE)szBuf,
uiLenWithNull );
#else
        #ifdef _UNICODE
                char sShort[512];
                char sShortVal[512];
                char sDefault[512];
                BOOL b;
                *sDefault = *sShort=0;
                WideCharToMultiByte     ( CP_ACP, 0, szName, -1, sShort, 512, sDefault, &b );
                WideCharToMultiByte     ( CP_ACP, 0, szValue, -1, sShortVal, 512, sDefault, &b );
                m_lRetCode = ::RegSetValueExA (m_hKey, sShort, 0, REG_SZ,
```


BNSDOCID: <WO 0133381A1 I >

```
(LPBYTE) sShortVal,
 strlen(sShortVal)+1 );
        #else
                CString sTmp;
                LPTSTR szBuf = (LPTSTR)sTmp.GetBuffer(1024);
                memset ( szBuf, 0, 1024 );
                memcpy ( szBuf, szValue, min(1023,_tcslen(szValue))*sizeof(TCHAR) );
                szBuf[_tcslen(szValue)] = 0;

                //
                // remember...always write the NULL byte too!
                //
                UINT    uiLenWithNull = _tcslen(szBuf) + 1;

                m_lRetCode = ::RegSetValueEx (  m_hKey, szName, 0, REG_SZ,
                                                        (LPBYTE) szBuf,
 uiLenWithNull );
        #endif
 #endif

                bOK = (ERROR_SUCCESS == m_lRetCode);

 #ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
 #endif

        return bOK;
 } // End of RegPutStr()

 // ----------------------------------------------------------------------
 // Method: RegGetNum()
 // Purpose: Retrieves a number from the registry. there are various
 //                      overloads for different types.
 //
 BOOL xdRegistry::RegGetNum(LPCTSTR sName, DWORD& dwValue)
 {
        BOOL   bOK = TRUE;
        CString sTmp;
        LPTSTR          szBuf = sTmp.GetBuffer(XD_LEN_64);
        memset ( szBuf, 0, XD_LEN_64 );
        DWORD  dwType = 0;
        DWORD           dwSize = XD_LEN_64-1;

        //
        // Make sure that the registry is open
        //
        if (m_hKey == NULL)
                return FALSE;

 #ifndef _VXD_SOURCE_
        try
        {
 #endif

 #ifdef _VXD_SOURCE_
                bOK = RegGetStr ( sName, szBuf, sTmp.GetAllocLength()-1 );
                if ( bOK == TRUE )
```


3NSDOCID: <WO_____0133381A1_I_>

```
                    dwValue = (DWORD)atol((LPTSTR)szBuf);
#else
        #ifdef _UNICODE
                char sShort[512];
                char sDefault[512];
                char bufTmp[512];
                BOOL b=0;
                *sDefault = *sShort=0;
                WideCharToMultiByte     ( CP_ACP, 0, sName, -1, sShort, 512, sDefault, &b );
                m_lRetCode = ::RegQueryValueExA (m_hKey,                // hive/key
                                                                        sShort,
        // value name
                                                                        0,
                // reserved
                                                                        &dwType,
        // the REG_* type
                                                                        (LPBYTE)bufTmp,
        // pointer to the storage area
                                                                        &dwSize);
        // # to fetch (WITH NULL)
                bOK = (ERROR_SUCCESS == m_lRetCode);
                if ( bOK == TRUE )
                {
                        if ( dwType == REG_SZ )
                                dwValue = (DWORD)atol(bufTmp);
                }
        #else
                m_lRetCode = ::RegQueryValueEx (        m_hKey,
                                                                        sName,
                                                                        0,
                                                                        &dwType,
                                                                        (BYTE*)szBuf,
                                                                        &dwSize );

                bOK = (ERROR_SUCCESS == m_lRetCode);
                if ( bOK == TRUE )
                {
                        if ( dwType == REG_SZ )
                                dwValue = (DWORD)_ttol((LPTSTR)szBuf);
                        if ( dwType == REG_DWORD )
                                dwValue = * ((DWORD*)szBuf);
                }
        #endif
#endif

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegGetNum()

// ----------------------------------------------------------------------
//  Method: RegGetNum()
// Purpose: Retrieves a number from the registry. UINT version
//
BOOL xdRegistry::RegGetNum(LPCTSTR sName, UINT& uiValue)
{
```

```
        DWORD           dwValue = uiValue;
        BOOL   bOK = RegGetNum(sName,dwValue);

        uiValue = (UINT) dwValue;

        return bOK;
} // End of RegGetNum()

// ------------------------------------------------------------------
// Method: RegGetNum()
// Purpose: Retrieves a number from the registry. BOOL version
//
BOOL xdRegistry::RegGetNum(LPCTSTR sName, BOOL& bValue)
{
        DWORD           dwValue = bValue;
        BOOL   bOK = RegGetNum(sName,dwValue);

        bValue = (BOOL) dwValue;

        return bOK;
} // End of RegGetNum()

// ------------------------------------------------------------------
// Method: RegGetNum()
// Purpose: Retrieves a number from the registry. WORD VERSION.
//
BOOL xdRegistry::RegGetNum(LPCTSTR sName, WORD& wValue)
{
        DWORD           dwValue = wValue;
        BOOL   bOK = RegGetNum(sName,dwValue);

        wValue = (WORD) dwValue;

        return bOK;
} // End of RegGetNum()

// ------------------------------------------------------------------
// Method: RegPutNum()
// Purpose: writes a numeric value to the registry.
//
BOOL xdRegistry::RegPutNum(LPCTSTR sName, DWORD dwValue)
{
        BOOL   bOK = TRUE;

        //
        // make sure the key is open
        //
        if (m_hKey==NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif

#ifdef _VXD_SOURCE_
                CString sTmp;
                BYTE* szBuf = (BYTE*)sTmp.GetBuffer(132);
                sprintf( (LPTSTR)szBuf, _T("%lu"), dwValue);
                UINT uiLenWithNull = strlen((LPTSTR)szBuf) + 1; // ADD THE NULL!!!!!!!
                m_lRetCode = ::RegSetValueEx (  m_hKey, (LPTSTR)sName,
```


INSDOCID: <WO_____0133381A1 I >

```
                                                                    0, REG_SZ, szBuf,
uiLenWithNull );
                bOK = (ERROR_SUCCESS == m_lRetCode);
#else
        #ifdef _UNICODE
                char sShort[512];
                char sDefault[512];
                BOOL b;
                *sDefault = *sShort=0;
                WideCharToMultiByte     ( CP_ACP, 0, sName, -1, sShort, 512, sDefault, &b );
                sprintf( sDefault, "%lu", dwValue );
                m_lRetCode = ::RegSetValueExA (m_hKey, sShort, 0, REG_SZ,
                                                                    (LPBYTE)sDefault,
strlen(sDefault)+1 );
        #else
                CString sTmp;
                LPTSTR szBuf = sTmp.GetBuffer(XD_LEN_64);
                wsprintf( (LPTSTR)szBuf, _T("%lu"), dwValue);
                UINT uiLenWithNull = _tcslen((LPTSTR)szBuf) + 1; // ADD THE NULL!!!!!!!
                m_lRetCode = ::RegSetValueEx (  m_hKey,
                                                                    sName,
                                                                    0,
                                                                    REG_SZ,
                                                                    (BYTE*)szBuf,
                                                                    uiLenWithNull);
        #endif
#endif

                bOK = (ERROR_SUCCESS == m_lRetCode);

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegPutNum()

// ----------------------------------------------------------------------
// Method: RegDeleteValue()
// Purpose:
//
BOOL xdRegistry::RegDeleteValue ( LPCTSTR szValue )
{
        BOOL   bOK = TRUE;

        //
        // make sure the key is open
        //
        if (m_hKey==NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif

                m_lRetCode = ::RegDeleteValue (  m_hKey, (LPTSTR)szValue );
```

```
                bOK = (ERROR_SUCCESS == m_lRetCode);

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegDeleteValue()

// ----------------------------------------------------------------------
//  Method: RegEnumVal()
// Purpose: enumerates values for a key. i is the index to get
//
BOOL xdRegistry::RegEnumVal ( int i, LPCTSTR szValueName, UINT uiNameLenWithNull,
                                                                LPCTSTR szValueData, UINT
uiDataLenWithNull)
{
        BOOL   bOK = TRUE;
        DWORD          dwIdx = i;
        DWORD          dwSize = (DWORD) uiNameLenWithNull;
        DWORD  dwDataSize = (DWORD)uiDataLenWithNull;
        LPBYTE         pValue = (LPBYTE) szValueName;
        LPBYTE  pDataValue = (LPBYTE) szValueData;

        //
        // make sure the key is open
        //
        if (m_hKey==NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif

        //
        // initialize the string to be empty
        //
        memset ( pValue, 0, uiNameLenWithNull );
        memset ( pDataValue, 0, uiDataLenWithNull );

#ifdef _VXD_SOURCE_
                m_lRetCode = ::RegEnumValue(m_hKey,             // hive/key
                                                                dwIdx,                  // index
of the value to get
                                                                (LPTSTR)pValue,         //
valuename will go here
                                                                &dwSize,                // the
size of the buffer
                                                                0,
        // reserved,
                                                                NULL,                   //
address of type code
                                                                pDataValue,
                                                                &dwDataSize);

#else
                m_lRetCode = ::RegEnumValue(m_hKey,             // hive/key
```


BNSDOCID: <WO_____0133381A1_I_>

```
                                                        dwIdx,          // index
of the value to get
                                                        (LPTSTR)pValue, //
valuename will go here
                                                        &dwSize,        // the
size of the buffer
                                                        0,
        // reserved,
                                                        NULL,           //
address of type code
                                                        pDataValue,
                                                        &dwDataSize);
#endif

                bOK = (ERROR_SUCCESS == m_lRetCode);
                if ( bOK == TRUE )
                {
                        //
                        // terminate the string...ensure that we dont go past
                        // the max lenth of the string!
                        //
                        ((LPTSTR)szValueName) [ min(dwSize,uiNameLenWithNull) ] = 0;
                        ((LPTSTR)szValueData) [ min(dwDataSize,uiDataLenWithNull) ] = 0;
                }

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegEnumVal()

// ----------------------------------------------------------------------
//  Method: RegPutBin()
// Purpose: write the information to the registry
//
BOOL xdRegistry::RegPutBin ( LPCTSTR szName, BYTE* pBuffer, UINT uiLength )
{
        BOOL   bOK = TRUE;

        //
        // make sure the key is open
        //
        if (m_hKey==NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif
                //
                // move everything into a temp buffer so that we can ensure
                // the existance of a NULL byte on the end of the string
                //
                CString sTmp;
                LPTSTR szBuf = sTmp.GetBuffer(132);
                memset ( szBuf, 0, 132 );
```


BNSDOCID: <WO_____0133381A1_I_>

```
                memcpy ( szBuf, pBuffer, min(sTmp.GetAllocLength()-1,uiLength) );

                m_lRetCode = ::RegSetValueEx (   m_hKey,
                                                                (LPTSTR)szName,
                                                                0,
                                                                REG_BINARY,
                                                                (LPBYTE) szBuf,
                                                                uiLength );
                bOK = (ERROR_SUCCESS == m_lRetCode);

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegPutBin()

// ----------------------------------------------------------------------
//  Method: RegEnumKey()
// Purpose: enumerates values for a key. i is the index to get
//
BOOL xdRegistry::RegEnumKey ( int i, LPCTSTR szValueName, UINT uiNameLenWithNull)
{
        BOOL   bOK = TRUE;
        DWORD          dwIdx = i;
        DWORD          dwSize = (DWORD) uiNameLenWithNull;
        LPBYTE         pValue = (LPBYTE) szValueName;

        //
        // make sure the key is open
        //
        if (m_hKey==NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif
                //
                // initialize the string to be empty
                //
                memset ( pValue, 0, uiNameLenWithNull );

#ifdef _VXD_SOURCE_
                m_lRetCode = ::RegEnumKey(m_hKey,               // hive/key
                                                                dwIdx,          // index of the
value to get
                                                                (LPTSTR)pValue,         // valuename will
go here
                                                                dwSize);        // the size of the
buffer
#else
                m_lRetCode = ::RegEnumKey(m_hKey,               // hive/key
                                                                dwIdx,          // index of the
value to get
                                                                (LPTSTR)pValue,         // valuename will
go here
```

```
                                                    dwSize);        // the size of the
buffer
#endif
                bOK = (ERROR_SUCCESS == m_lRetCode);
                if (bOK==TRUE)
                {
                        //
                        // terminate the string...ensure that we dont go past
                        // the max lenth of the string!
                        //
                        ((LPTSTR)szValueName) [ min(dwSize,uiNameLenWithNull) ] = 0;
                }

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegEnumKey()
```


RNSDOCID: <WO 01333381A1 | >

```
//
// Module: xdFileIO.cpp
// Subsystem: X:drive Tools Library (xdTools.dll)
// Contents: Redefinitions for the FILE IO functions
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//
#include "stdafx.h"
#include <xdGlobals.h>              // X:drive system wide globals
#include <xdTools.h>

#ifdef _DEBUG
        #undef THIS_FILE
        static char BASED_CODE THIS_FILE[] = __FILE__;
#endif

#ifdef _VXD_SOURCE_
        #include LOCKED_CODE_SEGMENT
        #include LOCKED_DATA_SEGMENT
#endif

#ifdef _VXD_SOURCE_
// ---------------------------------------------------------------------
// Function: CreateFile()
//  Purpose: This API function maps the standard Win32 CreateFile function
//                          to the Ring-0 R0_OpenCreateFile() call.
// Returns: INVALID_HANDLE_VALUE - bad
//                          something else - good!
//
HANDLE CreateFile ( LPCTSTR lpFileName,      // pointer to name of the file
                                        DWORD dwDesiredAccess,    // access (read-write) mode
                                        DWORD dwShareMode,        // share mode
                                        void* lpSecAtt,                         // pointer to security
attributes
                                        DWORD dwCreateFlags,            // how to create
                                        DWORD dwFlagsAndAttributes,   // file attributes
                                        HANDLE)
{
        HANDLE          h = INVALID_HANDLE_VALUE;
        WORD  wError = 0;
        WORD  wMode = 0;
        BYTE    action = 0;

        switch (dwDesiredAccess)
        {
        case GENERIC_READ:
                wMode = OPEN_ACCESS_READONLY;
                break;
        case GENERIC_WRITE:
                wMode = OPEN_ACCESS_WRITEONLY;
                break;
        default:
                wMode = OPEN_ACCESS_READWRITE;
                break;
        }
```


INSDOCID: <WO_____ 0133381A1 I >

```
        //
        // file sharing not supported!
        //
        wMode |= OPEN_SHARE_COMPATIBLE;

        //
        // Create Attributes
        //
        switch ( dwCreateFlags )
        {
        case CREATE_NEW: // create New file. fail if file exists
                action = ACTION_IFEXISTS_FAIL | ACTION_IFNOTEXISTS_CREATE;
                break;
        case CREATE_ALWAYS: // create New file. overwrite if exists
                action = ACTION_IFEXISTS_TRUNCATE | ACTION_IFNOTEXISTS_CREATE;
                break;
        case OPEN_EXISTING: // open file, fail if the file does not exists
                action = ACTION_IFEXISTS_OPEN | ACTION_IFNOTEXISTS_FAIL;
                break;
        case OPEN_ALWAYS: // open file. if !exists, create
                action = ACTION_IFEXISTS_OPEN | ACTION_IFNOTEXISTS_CREATE;
                break;
        case TRUNCATE_EXISTING: // open&truncate file. fail if it does not exist
                action = ACTION_IFEXISTS_OPEN | ACTION_IFEXISTS_TRUNCATE |
ACTION_IFNOTEXISTS_FAIL;
                break;
        }

        h = R0_OpenCreateFile(1,(LPTSTR)lpFileName,wMode,
                                                ATTR_NORMAL,action,R0_NO_CACHE,&wError,
&action);
        return h;
} // End of CreateFile()

// ----------------------------------------------------------------------
// Function: ReadFile()
// Purpose: This API function maps the standard Win32 ReadFile function
//                      to the Ring-0 R0_ReadFile() call.
// Returns: TRUE - Good read
//                      FALSE - Bad Read
//
BOOL ReadFile ( HANDLE hFile, void* lpBuffer, DWORD dwBytesToRead,
                        DWORD* pdwBytesRead, void* pdwOffset)
{
        WORD wError = 0;
        DWORD dwOffset = 0;

        if ( pdwOffset )
                dwOffset = *((DWORD*)pdwOffset);

        *pdwBytesRead = R0_ReadFile ( TRUE, hFile, lpBuffer, dwBytesToRead,
                                                                dwOffset, &wError );
        return ( wError == 0 );
} // End of ReadFile()

// ----------------------------------------------------------------------
// Function: WriteFile()
// Purpose: This API function maps the standard Win32 WriteFile function
//                      to the Ring-0 R0_WriteFile() call.
// Returns: TRUE - Good write
//                      FALSE - Bad write
```

```
//
BOOL WriteFile ( HANDLE hFile, LPCTSTR lpBuffer, DWORD dwBytesToWrite,
                                DWORD* pBytesWritten, void* p)
{
        WORD  wError = 0;
        DWORD         dwFilePos = R0_GetFileSize(hFile,&wError);
        *pBytesWritten = R0_WriteFile ( TRUE, hFile, (void*)lpBuffer, dwBytesToWrite,
                                                                dwFilePos, &wError );
        return (wError == 0);
} // End of WriteFile()

// ---------------------------------------------------------------------
// Function: CloseHandle()
//  Purpose: This API function maps the standard Win32 CloseHandle function
//                          to the Ring-0 R0_CloseFile() call.
//  Returns: TRUE - success
//                          FALSE - failure
//
BOOL CloseHandle ( HANDLE hFile )
{
        WORD wError = 0;
        return R0_CloseFile ( hFile, &wError );
} // End of CloseHandle()

// ---------------------------------------------------------------------
// Function: GetFileSize()
//  Purpose: This API function maps the standard Win32 GetFileSize function
//                          to the Ring-0 R0_GetFileSize() call.
//  Returns: TRUE - success
//                          FALSE - failure
//
DWORD GetFileSize ( HANDLE hFile, DWORD* pdwHigh )
{
        WORD wError = 0;
        return R0_GetFileSize ( hFile, &wError );
} // End of GetFileSize()


// ---------------------------------------------------------------------
// Function: ReadFileLine()
//  Purpose: This API function maps the standard Win32 ReadFile function
//                          to the Ring-0 R0_ReadFile() call.
//  Returns: TRUE - Good read
//                          FALSE - Bad Read
//
BOOL ReadFileLine ( HANDLE hFile, BYTE* lpBuffer,
                                DWORD dwBytesToRead,
                                        DWORD* pdwBytesRead,
                                        DWORD* pdwOffset )
{
        WORD wError = 0;
        DWORD dwOffset = 0;

        if ( pdwOffset )
                dwOffset = *((DWORD*)pdwOffset);

        //
        // Check for EOF
        //
        if ( dwOffset >= R0_GetFileSize(hFile,&wError) )
                return FALSE;
```


INSDOCID: <WO_____0133381A1 I >

```
        // *pdwBytesRead = R0_ReadFile ( TRUE, hFile, lpBuffer, dwBytesToRead,
        //                                                      dwOffset, &wError );

        memset ( lpBuffer, 0, dwBytesToRead );

        int iTmpBytesRead = 1;
        BOOL bFoundEOL = FALSE;
        int i=0;
        for ( i=0; (iTmpBytesRead != 0) && (i<dwBytesToRead) &&
                                        (wError == 0) && (bFoundEOL==FALSE); i++ )
        {
                iTmpBytesRead = R0_ReadFile ( TRUE, hFile, &(lpBuffer[i]), 1, dwOffset+i, &wError );
                if ((iTmpBytesRead != 0) &&     (wError == 0))
                {
                        if ( lpBuffer[i] == chNL )
                                bFoundEOL = TRUE;
                }
        }

        *pdwBytesRead = i;

        return ( wError == 0 );
} // End of ReadFileLine()
#endif
```

```
//
// Module: xdDebugger.cpp
// Subsystem: X:drive Tools Library (xdTools.dll)
// Contents: Implementation module for the xdDebugger utliity class.
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//
#include "stdafx.h"
#include <xdGlobals.h>                  // X:drive system wide globals
#include <xdTools.h>                            // X:drive Tools Related
#include <xdDebugger.h>

#ifndef _VXD_SOURCE_
        #include <afxmt.h>
        #include "resource.h"
#endif

#ifdef _DEBUG
        #undef THIS_FILE
        static char BASED_CODE THIS_FILE[] = __FILE__;
#endif

#ifdef _VXD_SOURCE_
        #include LOCKED_CODE_SEGMENT
        #include LOCKED_DATA_SEGMENT
#endif

// ---------------------------------------------------------------------
// Method: xdDebugger()
// Purpose: Constructor for the debugger class.
//
xdDebugger::xdDebugger()
{

#ifndef _VXD_SOURCE_
        try
#endif
        {
                m_szLogFile = (LPTSTR)malloc(XD_LEN_1024);
                m_szMsg = (LPTSTR)malloc(XD_LEN_2048);
                m_szBuf = (LPTSTR)malloc(XD_LEN_2048);

                m_hLogFile = NULL;
                m_bLogFile = FALSE;

                _tcscpy ( m_szLogFile, XD_LOGFILE_NP );

#ifndef _VXD_SOURCE_
                m_pSem = new CSemaphore(1,1);
#endif
        }
#ifndef _VXD_SOURCE_
        catch(...)
        {
                XDCATCH;
```


3NSDOCID: <WO_____0133381A1 I >

```
        }
#endif
} // End of xdDebugger()

// ------------------------------------------------------------------------
// Method: ~xdDebugger()
// Purpose: Destructor.
//
xdDebugger::~xdDebugger()
{
#ifndef _VXD_SOURCE_
        delete m_pSem;
#endif
        free(m_szMsg);
        free(m_szLogFile);
        free(m_szBuf);

} // End of ~xdDebugger()

// ------------------------------------------------------------------------
// Method: DebuggerOn()
// Purpose: turns on debugging to the optional logfile
//
void xdDebugger::DebuggerOn(BOOL bInitialize)
{
#ifdef _VXD_SOURCE_
        WORD wError = 0;
        BYTE bAction = 0;

        //
        // force a creation of the file if it does not already exist. Then
        // simply close the file; we ll open it when we need to write to
        // it.
        //
        m_bLogFile = TRUE;
        if ( bInitialize == TRUE )
        {
                LPTSTR szOldFile = (LPTSTR)malloc( XD_LEN_1024 );
                strcpy ( szOldFile, m_szLogFile );
                LPTSTR pDot = strrchr(szOldFile,chPERIOD);
                if ( pDot != NULL)
                        *pDot = NULL;
                strcat ( szOldFile, ".old" );
                R0_DeleteFile ( szOldFile, 0, &wError );
                R0_RenameFile ( m_szLogFile, szOldFile, &wError );
                m_hLogFile = R0_OpenCreateFile ( TRUE, m_szLogFile,

OPEN_SHARE_DENYWRITE|OPEN_ACCESS_WRITEONLY,
                                                        ATTR_NORMAL,

ACTION_IFEXISTS_TRUNCATE|

ACTION_IFNOTEXISTS_CREATE,
                                                        0, &wError,

(PUCHAR)&bAction );
                free(szOldFile);
        }
        else
                m_hLogFile = R0_OpenCreateFile ( TRUE, m_szLogFile,

OPEN_SHARE_DENYWRITE|OPEN_ACCESS_WRITEONLY,
                                                        ATTR_NORMAL,
```

```
ACTION_IFEXISTS_OPEN|

ACTION_IFNOTEXISTS_CREATE,

                                                                    0, &wError,
(PUCHAR)&bAction );
        //
        // Ok, we opened/created the close it again. We never want to keep
        // the logfile open so that we ensure that its contents are saved
        // to disk.
        //
        if ( (m_hLogFile != NULL) && (wError == 0) )
                R0_CloseFile ( m_hLogFile, &wError );
        m_hLogFile = NULL;
#else
        try
        {
                //
                // force a creation of the file if it does not already exist. Then
                // simply close the file; we ll open it when we need to write to
                // it.
                //
                m_bLogFile = TRUE;

                if (bInitialize == TRUE)
                {
                        CString sOldFile;
                        LPTSTR szOldFile = sOldFile.GetBuffer(512);;
                        _tcscpy ( szOldFile, m_szLogFile );
                        LPTSTR pDot = _tcsrchr(szOldFile,chPERIOD);
                        if ( pDot != NULL)
                                *pDot = NULL;
                        _tcscat ( szOldFile, _T(".old") );
                        DeleteFile ( szOldFile );
                        try
                        {
                                CFile::Rename( m_szLogFile, szOldFile );
                        }
                        catch(...)
                        {
                        }
#ifdef _UNICODE
                        m_hLogFile = _wfopen(m_szLogFile,_T("w+"));
#else
                        m_hLogFile = fopen(m_szLogFile,_T("w+"));
#endif
                }
                else
#ifdef _UNICODE
                        m_hLogFile = _wfopen(m_szLogFile,_T("a+"));
#else
                        m_hLogFile = fopen(m_szLogFile,_T("a+"));
#endif
                if ( m_hLogFile != NULL )
                        fclose(m_hLogFile);
                m_hLogFile = NULL;
        }
        catch(...)
        {
                XDCATCH;
        }
#endif
```


BNSDOCID: <WO_____0133381A1 I >

```
} // End of DebuggerOn()

// ----------------------------------------------------------------------
// Method: DebuggerOff()
// Purpose: turns off debugging to the optional logfile
//
void xdDebugger::DebuggerOff()
{
#ifdef _VXD_SOURCE
        WORD wError = 0;
        if (m_hLogFile!=NULL)
                R0_CloseFile ( m_hLogFile, &wError );
        m_bLogFile = FALSE;
#else
        m_bLogFile = FALSE;
#endif

} // End of DebuggerOff()

// ----------------------------------------------------------------------
// Method: DEBUGMSG()
// Purpose: always dumps the messages to debugger window and optionally to
//       the file...
//
void xdDebugger::DEBUGMSG(TCHAR *fmt,...)
{

#ifdef _VXD_SOURCE_
        va_list         args;
        //
        // parse out the info
        //
        va_start(args,fmt);
        vsprintf(m_szBuf,fmt,args);
        va_end(args);
        //
        // add a <cr>
        //
        if (strchr(m_szBuf,chNL)==NULL)
                strcat(m_szBuf,"\r\n");

        strcpy ( m_szMsg, "FSD: ");
        strcat ( m_szMsg, m_szBuf );

#ifdef DEBUG
        DEBUGTRACE(m_szMsg);
#endif

        //
        // if the logfile is engaged, dump it!
        //
        if (m_bLogFile==TRUE)
        {
                WORD wError = 0;
                BYTE bAction = 0;

                //
                // open the file, dump the string, then close the file!!!
                //
                m_hLogFile = R0_OpenCreateFile ( TRUE, m_szLogFile,
```

```
OPEN_SHARE_DENYWRITE|OPEN_ACCESS_WRITEONLY,
                                                        ATTR_NORMAL,
ACTION_IFEXISTS_OPEN | ACTION_IFNOTEXISTS_CREATE,
                                                        0, &wError,
(PUCHAR)&bAction );
                if ((m_hLogFile != NULL) && (wError == 0))
                {
                        DWORD dwOffset = R0_GetFileSize ( m_hLogFile, &wError );
                        R0_WriteFile ( TRUE, m_hLogFile, m_szMsg, strlen(m_szMsg),
                                                dwOffset, &wError);
                        R0_CloseFile(m_hLogFile,&wError);
                        m_hLogFile = NULL;
                }
        }
#else
        try
        {
                //
                // only wait 1 second, then do it. This guarantees that
                // we dont lock up the system
                //
                if ( m_pSem->Lock(5000) == TRUE )
                {
                        va_list         args;
                        //
                        // parse out the info
                        //
                        va_start(args,fmt);
                        _vstprintf(m_szBuf,fmt,args);
                        va_end(args);
                        //
                        // add a <cr>
                        //
                        if (_tcschr(m_szBuf,chNL)==NULL)
                                _tcscat(m_szBuf,szNL);

                        *m_szMsg = 0;
                        _tcscpy(m_szMsg,_T("LOG: "));
                        _tcscat(m_szMsg,m_szBuf);

                        //
                        // dump it to the IDE debugger
                        //
                        #ifdef _DEBUG
                          OutputDebugString(m_szMsg);
                        #endif

                        //
                        // if the logfile is engaged, dump it!
                        //
                        if (m_bLogFile == TRUE)
                        {

                                //
                                // open the file, dump the string, then close the file!!!
                                //
#ifdef _UNICODE
                                m_hLogFile = _wfopen(m_szLogFile,_T("a"));
#else
                                m_hLogFile = fopen(m_szLogFile,_T("a"));
```


3NSDOCID: <WO 0133381A1 I >

```
#endif
                                        if (m_hLogFile != NULL)
                                        {
                                                _fputts(m_szMsg,m_hLogFile);
                                                //fflush(m_hLogFile);
                                                fclose(m_hLogFile);
                                                m_hLogFile =  NULL;
                                        }
                                }
                        }
                }
                catch(...)
                {
                        XDCATCH;
                        if (m_hLogFile!=NULL)
                        {
                                //fflush(m_hLogFile);
                                fclose(m_hLogFile);
                                m_hLogFile =  NULL;
                        }
                }
                m_pSem->Unlock();
#endif

} // End of DEBUGMSG

#ifndef _VXD_SOURCE_
// ----------------------------------------------------------------------
//  Method: DEBUGMSG()
// Purpose: loads the string and then dumps it to the logfile.
//
void xdDebugger::DEBUGMSG(UINT uiResourceId)
{
  CString s = XD_LOADSTRING(uiResourceId);
  DEBUGMSG(_T("%s\n"),s);
} // End of DEBUGMSG()
#endif

// ----------------------------------------------------------------------
//  Method: SetLogName()
// Purpose:
//
void xdDebugger::SetLogName(LPCTSTR s)
{
        _tcscpy ( m_szLogFile, s );
} // End of SetLogName()

// ----------------------------------------------------------------------
//  Method: IsDebuggerOn()
// Purpose:
//
BOOL xdDebugger::IsDebuggerOn ( void )
{
        return m_bLogFile;
} // End of IsDebuggerOn()
```

JavaScript Listing

//button.js 1
//diskInfo.js 6
//launch.js 10
//nav.js 11
//saveToXdrive.js 28
//secure_login.js 31
//skip.js 33
//skipthedownload.js 35
//submit.js 38
//uploadStatus.js 53
//utils.js 54
//verify_lib.js 57
//xparse.js 69

BNSDOCID: <WO_____0133381A1_I_>

//button.js

```
// Is called upon loading of page to set up the button image arrays
function XDloadToolbarButtons ()
      {
      if (XD_gsAction == '') {
            for (var i=0; i < 4; i=i+3)
                  {
                  g_aimgUpload[i] = new Image();
                  g_aimgDownload[i] = new Image();
                  g_aimgNewFolder[i] = new Image();
                  g_aimgMove[i] = new Image();
                  g_aimgRename[i] = new Image();
                  g_aimgDelete[i] = new Image();
                  g_aimgHelp[i] = new Image();
                  g_aimgView[i] = new Image();
                  g_aimgShare[i] = new Image();

                  g_aimgUpload[i].src = XD_gsGraphicsLanguageRoot+ "up" + i +
".gif";
                  g_aimgDownload[i].src = XD_gsGraphicsLanguageRoot+ "down" +
i + ".gif";
                  g_aimgView[i].src = XD_gsGraphicsLanguageRoot+ "view" + i +
".gif";
                  g_aimgNewFolder[i].src = XD_gsGraphicsLanguageRoot+ "new" +
i + ".gif";
                  g_aimgMove[i].src = XD_gsGraphicsLanguageRoot+ "move" + i +
".gif";
                  g_aimgRename[i].src = XD_gsGraphicsLanguageRoot+ "name" + i
+ ".gif";
                  g_aimgDelete[i].src = XD_gsGraphicsLanguageRoot+ "delete" +
i + ".gif";
                  g_aimgShare[i].src =  XD_gsGraphicsLanguageRoot+ "share" +
i + ".gif";

//                g_aimgUpload[i].src = XD_gsGraphicsLanguageRoot+
"nav_upload" + i + ".gif";
//                g_aimgDownload[i].src = XD_gsGraphicsLanguageRoot+
"nav_download" + i + ".gif";
//                g_aimgView[i].src = XD_gsGraphicsLanguageRoot+ "nav_view" +
i + ".gif";
//                g_aimgNewFolder[i].src = XD_gsGraphicsLanguageRoot+
"nav_newfolder" + i + ".gif";
//                g_aimgMove[i].src = XD_gsGraphicsLanguageRoot+ "nav_move" +
i + ".gif";
//                g_aimgRename[i].src = XD_gsGraphicsLanguageRoot+
"nav_rename" + i + ".gif";
//                g_aimgDelete[i].src = XD_gsGraphicsLanguageRoot+
"nav_delete" + i + ".gif";
//                g_aimgShare[i].src =  XD_gsGraphicsLanguageRoot+
"nav_share" + i + ".gif";
                  }
            }
      }

// Takes a button and an event and returns a status
// as defined by the containt button statuses
function XDtoolbarButtonStatus(button, event)
      {
      var rv = XD_TOOLBAR_BUTTON_ENABLED;
```


BNSDOCID: <WO 0133381A1 | >

```
// Just exit if no controls are enabled
if(!ControlsEnabled)
{
      return XD_TOOLBAR_BUTTON_DISABLED;
}

if (event == XD_EVENT_MOUSEOVER)
{
rv = XD_TOOLBAR_BUTTON_ACTIVE;
}
else if (event == XD_EVENT_MOUSEOUT)
{
rv = XD_TOOLBAR_BUTTON_ENABLED;
}
else if (event == XD_EVENT_CLICK)
{
rv = XD_TOOLBAR_BUTTON_CLICKED;
}

if ((button == XD_TOOLBAR_BUTTON_UPLOAD)
&& (XD_gnSelectedFolderCount != 1))
{
rv = XD_TOOLBAR_BUTTON_DISABLED;
}
else if
 ((button == XD_TOOLBAR_BUTTON_DOWNLOAD)
  && (XD_gnSelectedCount  != 1 ||  XD_gnSelectedFolderCount != 0))
{
rv = XD_TOOLBAR_BUTTON_DISABLED;
}
else if

 ((button == XD_TOOLBAR_BUTTON_NEWFOLDER)
  && (XD_gnSelectedFolderCount != 1))
{
rv = XD_TOOLBAR_BUTTON_DISABLED;
}
else if

 ((button == XD_TOOLBAR_BUTTON_MOVE)
  && (XD_gnSelectedCount  == 0))
{
rv = XD_TOOLBAR_BUTTON_DISABLED;
}
else if

 ((button == XD_TOOLBAR_BUTTON_DELETE)
  && (XD_gnSelectedCount == 0))
{
rv = XD_TOOLBAR_BUTTON_DISABLED;
}
else if
 ((button == XD_TOOLBAR_BUTTON_RENAME)
  && (XD_gnSelectedCount != 1))
{
rv = XD_TOOLBAR_BUTTON_DISABLED;
}
else if
 (button == XD_TOOLBAR_BUTTON_VIEW)
{
rv = XD_TOOLBAR_BUTTON_DISABLED;
if (XD_gnSelectedCount == 1 && XD_gnSelectedFolderCount ==  0)
      {
```


BNSDOCID: <WO_____0133381A1_I_>

```
            rv = XD_TOOLBAR_BUTTON_ENABLED;
            }
      }
      else if
       (button == XD_TOOLBAR_BUTTON_SHARE)
      {
      rv = XD_TOOLBAR_BUTTON_DISABLED;
      if (XD_gnSelectedCount == 1 && XD_gnSelectedFolderCount ==  0)
            {
            rv = XD_TOOLBAR_BUTTON_ENABLED;
            }
      }

      return rv;
      }

// Wrapper for updating images, used for checking if the image exists before
// attempting to udpate it.

function XDImageUpdate (oImage,imgGraphic)
      {
      if (oImage)
            {
            // If the image exists then update it
            oImage.src = imgGraphic;
            }
      else
            {
            // otherwise do nothing
            }
      }

// Takes a button and an event, finds the status
// and then refreshes the button.

function XDrefreshButton (sButton, sEvent)
      {
      if (XD_gsAction == '') {
      var nStatus = XDtoolbarButtonStatus(sButton, sEvent);
      var oFrame = XD_goFrameControls;

      XD_gsPreviousGrove = grove;

      if (sButton == XD_TOOLBAR_BUTTON_UPLOAD)
            {

      XDImageUpdate(oFrame.document.img_upload,g_aimgUpload[nStatus].src);
            }
      else if (sButton == XD_TOOLBAR_BUTTON_DOWNLOAD)
            {

      XDImageUpdate(oFrame.document.img_download,g_aimgDownload[nStatus].src)
;
            }
      else if (sButton == XD_TOOLBAR_BUTTON_NEWFOLDER)
            {
            XDImageUpdate (oFrame.document.img_newfolder,
g_aimgNewFolder[nStatus].src);
            }
      else if (sButton == XD_TOOLBAR_BUTTON_MOVE)
            {
            XDImageUpdate(oFrame.document.img_move,g_aimgMove[nStatus].src);
            }
```


3NSDOCID: <WO 0133381A1 I >

```
        else if (sButton == XD_TOOLBAR_BUTTON_RENAME)
              {

        XDImageUpdate(oFrame.document.img_rename,g_aimgRename[nStatus].src);
              }
        else if (sButton == XD_TOOLBAR_BUTTON_DELETE)
              {

        XDImageUpdate(oFrame.document.img_delete,g_aimgDelete[nStatus].src);
              }
        else if (sButton == XD_TOOLBAR_BUTTON_VIEW)
              {
              XDImageUpdate(oFrame.document.img_view,g_aimgView[nStatus].src);
              }
        else if (sButton == XD_TOOLBAR_BUTTON_SHARE)
              {

        XDImageUpdate(oFrame.document.img_share,g_aimgShare[nStatus].src);
              }
        }
}

//This refreshes all the buttons at one time.
function XDrefreshAllButtons()
      {
      XDrefreshButton(XD_TOOLBAR_BUTTON_UPLOAD, null);
      XDrefreshButton(XD_TOOLBAR_BUTTON_DOWNLOAD, null);
      XDrefreshButton(XD_TOOLBAR_BUTTON_NEWFOLDER, null);
      XDrefreshButton(XD_TOOLBAR_BUTTON_MOVE, null);
      XDrefreshButton(XD_TOOLBAR_BUTTON_RENAME, null);
      XDrefreshButton(XD_TOOLBAR_BUTTON_DELETE, null);
      XDrefreshButton(XD_TOOLBAR_BUTTON_VIEW, null);
      XDrefreshButton(XD_TOOLBAR_BUTTON_SHARE, null);
      }

// Wraper that handles button click events.
function XDbuttonClick (sButton)
      {
      XDrefreshButton(sButton, XD_EVENT_CLICK);
      }


// Wrapper that handles the button MouseOver events
function XDbuttonOver (sButton)
      {
      XDrefreshButton(sButton, XD_EVENT_MOUSEOVER);
      }


// Wrapper that handles teh button MouseOut events.
function XDbuttonOut (sButton)
      {
      XDrefreshButton(sButton, XD_EVENT_MOUSEOUT);
      }

function XDfunctionStatus(button)
      {
      if (! ControlsEnabled)
            {
            return false;
            }
```

```
    if (XDtoolbarButtonStatus(button, XD_EVENT_MOUSEOVER) ==
XD_TOOLBAR_BUTTON_ACTIVE)
          {
          return true;
          }
    else
          {
          return false;
          }
    }
```


BNSDOCID: <WO_____0133381A1_I_>

//diskInfo.js

```
// NOTE: The table trick works differently in IE vrs Netscape.  In netscape
you need to
// have an   as a value within the TD's while in IE you do not need
anything.
function mresponse()
        {
      parent.parent.parent.frames['centerview'].document.location =
"../explorer/more_space_mail.html";

        }

function XDdisplayDiskInfo (oFrame)
{
      //3K always taken up by xdrive, public and private folders
      //changed code so it doesn't show as red any more
    var nUsed = XD_gnQuotaUsed;
    var nTotal = XD_gnQuotaTotal;

    //var nGraphWidth = XD_gnFileGraphWidth;
    var sGraphUsedColor = XD_gsUsedColor;
    var sGraphFreeColor = XD_gsFreeColor;

    var freeMB = nTotal - nUsed;
    var usedPercent = Math.round(100 * (nUsed/nTotal));

    ///// Do some basic bound checking
    if (usedPercent > 100)
        {
        usedPercent = 100;
        sGraphFreeColor = sGraphUsedColor;
        }
    if ( usedPercent < 0  )
       {
       usedPercent = 0;
       }

    var freePercent = 100-usedPercent;

    oFrame.write('<FORM name="controlForm">');

    oFrame.write('<TABLE width=500 border=0 cellpadding=0
cellspacing=0><TR>\n');
    oFrame.write('<TD width=300> </TD>\n');
    oFrame.write('<TD align="right" width=50><B><FONT size="-1">' +
XD_gsEmpty + '</FONT></B><img src="/images/spacer.gif" width=1
height=1></TD>\n');
    oFrame.write('<TD align="center" width=100>\n');
    oFrame.write('<TABLE width=100 CELLPADDING=0 CELLSPACING=0
BORDER=0><TR>\n');
if (usedPercent != 0)
{
oFrame.write('<TD height=10 WIDTH="' + usedPercent + '%" BGCOLOR="' +
sGraphUsedColor + '"><img src="/images/spacer.gif" width=1
height=1></TD>\n');
}
    oFrame.write('<TD height=10 WIDTH="' + freePercent + '%" BGCOLOR="' +
sGraphFreeColor + '"><img src="/images/spacer.gif" width=1
height=1></TD>\n');
    oFrame.write('</TR></TABLE>\n');
```


BNSDOCID: <WO_____ 0133381A1 I >

```
    oFrame.write('</TD><TD align="left" width=50><img
src="/images/spacer.gif" width=1 height=1><B><FONT size="-1">' + XD_gsFull +
'</FONT></B></TD>\n');

    oFrame.write('</TR>\n');
    oFrame.write('</TABLE>\n');

    if (usedPercent>90)
      {
      oFrame.write('<TABLE width=500 border=0 cellpadding=0
cellspace=0><TR><TD width=300><img src="/images/spacer.gif" width=300
height=1></TD><TD width=200 valign=center align=left><FONT size="-1"
face="verdana,arial">' + XD_gsOutOfSpace + '?<BR><A HREF="/cgi-
bin/addspace.cgi?action=intro" target="centerview">' + XD_gsBuyMore +
'</A></FONT></TD></TR></TABLE>');

        }


    oFrame.write('<input type="hidden" name="multipleSelect" value="N">');
    oFrame.write('</FORM>');
}

function XDSelectedList()
    {
    return XD_gsSelectedList;
    }

function XDSelectedFolder()
    {
    return
XD_gsSelectedFolderList.substring(0,XD_gsSelectedFolderList.length-1);
    }

/*****************************************************************************
* XDCleanupPath: Cleanup the passed path by removing the "/X:drive/" prefix
* and the + postfix.
*****************************************************************************/
function XDPathCleanup(sPath)
    {
    var sCopy = sPath;
    sCopy = sCopy.substring(9,sCopy.length)
            //sCopy = sCopy.substring(0,sCopy.length-1);
            return sCopy;
    }

function XDMultiSelect (sValue)
    {
    if (sValue != 'null' && sValue != "")
        {
        m_sMultiSelect = sValue;
        }
    else
        {
        return m_sMultiSelect;
        }
    }

function HTMLNavigation ()
    {
    var sHTML = HTMLStart()
                +'<table width="100%" border="0" cellspacing="0"
cellpadding="0">'
```

```
                    +'<tr align="left" valign="top" bgcolor="#5EB114">'
                    +'<td><img src="/images/main/logo_top.gif" width="153"
height="28"></td>'
                    +'</tr><tr>'
                    +'<td><img src="/images/main/logo_center.gif" width="171"
height="97" alt="X:drive"></td>'
                    +'</tr><tr>'
                    +'<td><img src="/images/main/race_logo_bottom.gif"
width="171" height="35"></td>'
                    +'</tr></table>'
                    +'<a target="toolbar" href="http://www.mit.edu">MIT</a>'
                    +'</BODY>\n</HTML>';
    return sHTML;
    }

function HTMLStart ()
    {
    return "<HTML>\n"
    +'<body bgcolor="#6961AB" topmargin="0" leftmargin="0" marginheight="0"
marginwidth="0" text="#FFFFFF" vlink="#FFFFFF" alink="#FFFFFF" link="#FFFFFF"
{onload}>'
    +"\n";
    }

function HTMLEnd ()
    {
    return "\n</BODY>\n</HTML>\n";
    }

function RedrawToolBar()
    {
    var sWindow = 'window.toolbar';
    sWindow.document.write(HTMLStart()+'test'+HTMLEnd());
    }

function roundOff(value, precision)
      {
      value += .000000001;
      part = "" + parseInt(value);
      size = part.length;
        value = "" + value; //convert value to string
      return value.substring(0,size+1+precision);
      }

function XDDiskUsed()
{
      var nUsed = XD_gnQuotaUsed;
      var nUsedMB = nUsed/1024;
      var nRound = roundOff(nUsedMB,2);
      var sRounded;

//    if (nUsed < 1024)
//          {
//          sRounded = '.'+nRound;
//          }
//    else
//          {
          sRounded = nRound;
//          }

      return sRounded;
}
```


INSDOCID: <WO___ 0133381A1 I >

```
function XDDiskTotal()
{
      var nTotal = XD_gnQuotaTotal;
      var nTotalMB = nTotal/1024;
      var nRound = roundOff(nTotalMB,2);
      var sRounded;

//    if (nTotal < 1024)
//          {
//          sRounded = '.'+nRound;
//          }
//    else
//          {
            sRounded = nRound;
//          }

      return sRounded + ' MB';
}

function XDDiskFree()
      {
      var nUsed = XD_gnQuotaUsed;
      var nTotal = XD_gnQuotaTotal;

      var nFreeMB = (nTotal - nUsed)/1024;
      var nRound = roundOff(nFreeMB,2);
      var sRounded;

//    if (nFreeMB < 1)
//          {
//          sRounded = '.'+nRound;
//          }
//    else
//          {
            sRounded = nRound;
//          }

      return sRounded + ' MB';
      }
```

//launch.js

```
/*****************************************************************************
* XDExplorerLaunch: Launch the passed explorer URL in a popup window.
*****************************************************************************/

function XDExplorerLaunch (
      sURL, //*** (I) The URL to open in the popup window
      nHeight, //*** (I) The height of the popup
      nWidth) //*** (I) The width of the popup
      {
      var w =
window.open(sURL,"XDriveExplorer","location=no,toolbar=no,menubar=yes,"+
            "status=no,resizable=no,scrolling=yes,scrollbars=no,"+
            "width="+nWidth+",height="+nHeight);

      //*** make sure the opener knows who the parent is
      if (w.opener == null) w.opener = self;

      //*** focus on the newly created window
      w.focus();
      }

function XDExplorerURL()
      {
      return '/cgi-bin/explorer.cgi';
      }

function XDDataURL()
      {
      return '/cgi-bin/explorer_data.cgi';
      }
```

//nav.js

```
// Added by Julie Wang 111999
//
// Function is used with <a href> to pop up another window to show X:drive's
Terms of Service
// page

function toc()
{
var url, window_name;

url="/company/toc.html";
window_name="toc";
window.open(
            url,
            window_name,

'toolbar=no,menubar=no,scrollbars=yes,fullscreen=no,resizable=no,width=650,he
ight=400'
            );
return;
}

// Added by Julie Wang 122199
//
// Function is used with <a href> to pop up another window to show a
// sample letter when someone use "Tell A Friend" feature.

function tell_a_friend_sample_email()
{
var url, window_name;

url="/generic_join_sample_email.html";
window_name="toc";
window.open(
            url,
            window_name,

'toolbar=no,menubar=no,scrollbars=yes,fullscreen=no,resizable=no,width=650,he
ight=400'
            );
return;
}

// Added by Julie Wang 102699
//
// Function writes the side bar nav. menu/buttons on general HTML pages for
every visitors.

function left_menu()
{
  document.write('<table width=\"138\" border=\"0\" cellspacing=\"0\"
cellpadding=\"0\">\n');
  document.write('<tr align=\"left\" valign=\"top\">\n');
  document.write('<td><a href=\"http://www.xdrive.com\"><img
src=\"/graphics/internal/btn_xdrivehome.gif\" width=\"138\" height=\"19\"
alt=\"X:drive Home\" border=\"0\"></a><br><img
src=\"/graphics/internal/divider.gif\" width=\"138\" height=\"5\"
alt=\"Divider\"></td>\n');
  document.write('</tr>\n');
```

```
document.write('<tr align=\"left\" valign=\"top\">\n');
document.write('<td>\n');
document.write('<table width=\"138\" border=\"0\" cellspacing=\"0\"
cellpadding=\"0\" background=\"/graphics/internal/lines.gif\">\n');
document.write('<tr align=\"left\" valign=\"top\">\n');
document.write('<td width=\"38\"><img src=\"/graphics/internal/icon-
new.gif\" width=\"38\" height=\"31\" alt=\"New\"></td>\n');
document.write('<td align=\"left\" valign=\"middle\" width=\"100\"><b><font
face=\"Arial, Helvetica, sans-serif\" size=\"2\"><a
href="/company/new.html\">What\'s New</a></font></b></td>\n');
document.write('</tr>\n');
document.write('<tr align=\"left\" valign=\"top\">\n');
document.write('<td width=\"38\"><img src=\"/graphics/internal/icon-
about.gif\" width=\"38\" height=\"34\" alt=\"About X:drive\"></td>\n');
document.write('<td align=\"left\" valign=\"middle\" width=\"100\"><b><font
face=\"Arial, Helvetica, sans-serifv size=\"2\"><a
href=\"/company/company.html\">About X:drive</a></font></b></td>\n');
document.write('</tr>\n');
document.write('<tr align=\"left\" valign=\"top\">\n');
document.write('<td width=\"38\"><img
src=\"/graphics/internal/icon_desktop.gif\" width=\"38\" height=\"28\"
alt=\"Desktop X:drive\"></td>\n');
document.write('<td align=\"left\" valign=\"middle\" width=\"100\"><b><font
face=\"Arial, Helvetica, sans-serif\" size=\"2\"><a
href=\"/company/main_download.html\">Desktop X:drive</a></font></b></td>\n');
document.write('</tr>\n');
document.write('<tr align=\"left\" valign=\"top\">\n');
document.write('<td width=\"38\"><img src=\"/graphics/internal/icon-
affiliates.gif\" width=\"38\" height=\"28\" alt=\"Affiliates\"></td>\n');
document.write('<td align=\"left\" valign=\"middle\" width=\"100\"><b><font
face=\"Arial, Helvetica, sans-serif\" size=\"2\"><a
href=\"/affiliates/befree/index.html\">X:drive
Affiliate</a></font></b></td>\n');
document.write('</tr>\n');
document.write('<tr align=\"left\" valign=\"top\">\n');
document.write('<td width=\"38\"><img src=\"/graphics/internal/icon-
faq.gif\" width=\"38\" height=\"32\" alt=\"FAQs\"></td>\n');
document.write('<td align=\"left\" valign=\"middle\" width=\"100\"><b><font
face=\"Arial, Helvetica, sans-serif\" size=\"2\"><a
href=\"/company/faq.html\">FAQ</a></font></b></td>\n');
document.write('</tr>\n');
document.write('</table>\n');

document.write('</td>\n');
document.write('</tr>\n');
document.write('<tr align=\"left\" valign=\"top\">\n');
document.write('<td><a href=\"/cgi-bin/signup_form.cgi\"><img
src=\"/graphics/internal/sign-up-now.gif\" width=\"138\" height=\"58\"
alt=\"Sign Up Now !\" border=\"0\"></a></td>\n');
document.write('</tr>\n');
document.write('<tr align=\"left\" valign=\"top\">\n');
document.write('<td><img src=\"/graphics/internal/whats-hot.gif\"
width=\"138\" height=\"19\" alt=\"What\'s Hot ?\"><br><img
src=\"/graphics/internal/divider.gif\" width=\"138\" height=\"5\"
alt=\"Divider\"></td>\n');
document.write('</tr>\n');
document.write('<tr align=\"left\" valign=\"top\">\n');
document.write('<td><a href=\"/freebies/english/freebiesout.html\"><img
src=\"/graphics/internal/freebies.gif\" width=\"138\" height=\"82\"
alt=\"Check Out Freebies -  Click Here\" border=\"0\"></a><br><img
src=\"/graphics/internal/divider.gif\" width=\"138\" height=\"5\"
alt=\"Divider\"></td>\n');
document.write('</tr>\n');
```


3NSDOCID: <WO 0133381A1 >

```
  document.write('<tr align=\"left\" valign=\"top\">\n');
  document.write('<td><a href=\"/company/main_download.html\"><img
src=\"/graphics/internal/btn_get_application.gif\" width=\"138\"
height=\"82\" alt=\"Download the desktop application!\"
border=\"0\"></a><br><img src=\"/graphics/internal/divider.gif\"
width=\"138\" height=\"5\" alt=\"Divider\"></td>\n');
  document.write('</tr>\n');
  document.write('<tr align=\"left\" valign=\"top\">\n');
  document.write('<td><a href=\"/demo/index.html\"><img
src=\"/graphics/internal/btn_skipdownload.gif\" width=\"138" height=\"82"
alt=\"Skip the download!\" border=\"0\"></a><br><img
src=\"/graphics/internal/divider.gif\" width=\"138\" height=\"5\"
alt=\"Divider\"></td>\n');
  document.write('</tr>\n');
  document.write('</table>\n');

  document.close();
  return true;
}

// Added by Martin Hald
function PathRemovePrefix(path)
    {
    return path.substring(10,path.length);
    }

// Function that redraws the file explorer

function show()
{
      var oDocument = FrameObject();

      oDocument.open("text/html");
      oDocument.write("<html>\n");
      oDocument.write("<head>\n");

      oDocument.write("</head>\n");
      oDocument.write('<body BGCOLOR="'+ XDBackgroundColor() + '"
BACKGROUND="' + XDBackgroundImage() + '">');
      oDocument.write(XD_sNewdoc);

      XDdisplayDiskInfo(oDocument);

      oDocument.write("</body>\n");
      oDocument.write("</html>\n");
      oDocument.close();
      XDrefreshAllButtons();
}

// parses the XML tree from the top frame and first calls show.
// This must be called on load of the main page.
function process(sExtra)
    {
      if (XD_gsAction == '')
      {

            grove = Xparse(XD_gsXML);


            //this resets the variables that track how many files and folders
are selected
            //don't reset if we are going into an action
            XDresetSelected();
```

```
        }

        // If we have just performed an action that involved a folder then
        // we will open that folder so the user can see the results of the
        // action.  To do so we update the old directory listing so that
        // the directory from which the action took place gets opened.
        if (XD_gnSelectedFolderID != '')
        {
              XD_gsPreviousGrove.index[XD_gnSelectedFolderID].attributes.show =
1;
        }

        // Now sync the view of the filesystem between the current and
        // previous views.
        synch(XD_gsPreviousGrove, grove);

        //reset attributes.selected for all items so that blue line does not
get drawn
        XDresetAllSelected();
      }


function BuildUpload()
{
        var oDocument = FrameObject();
        XD_gsActionUpload = true;
        HTMLGenericStart(oDocument);

        // var rand_num = parent.createRandomID();
        var rand_num = createRandomID();

        if (XD_gbExtraHelp)
        {
              oDocument.write(XDHelp(XD_gsHelpFileUpload));
        }

        oDocument.write("</TABLE>\n");

        oDocument.write('<p>\n');
        oDocument.write(XDHelp(XD_gsClientAd));
        oDocument.write('</p>\n');

        oDocument.write('<form name="form_upload" method="POST" action="/cgi-
bin/file_save.cgi" onSubmit="return
parent.parent.parent.openUpload(parent.parent.parent.XDCheckFormInput(),\'/cg
i-bin/file_upload_stat.cgi?id='+rand_num+'\',\'window\',(this));"
TARGET="centerview"');

        // oDocument.write('<form name="form_upload" method="POST"
action="/cgi-bin/file_save.cgi" onSubmit="return
(parent.parent.parent.XDCheckFormInput());" TARGET="centerview"');

        oDocument.write(' enctype="multipart/form-data">'+"\n");
        var results = '';
        results += '<input type="hidden" name="sFolderCurrent" value="'+
XDSelectedFolder() +'">\n';
        oDocument.write(results);

          oDocument.write('<input type=hidden name=id value='+rand_num+'>');

        oDocument.write('<TABLE cols=2>'+"\n");

        for (var i=1; i<=5; i++)
```


BNSDOCID: <WO 0133381A1 | >

```
        {
        oDocument.write('<tr><td valign="top" width="30"><FONT face="verdana,
arial, sans" size="-1"><b>' + XD_gsFile + i + ': </b></FONT></td><td><FONT
face="verdana, arial, sans" size="-1"><input type="file"
name="file_to_upload_0' + i + '" size="20"></FONT></td></tr>'+"\n");
        }
        oDocument.write('</tr>'+"\n");
        oDocument.write('<tr valign="top"> '+"\n<td colspan=2>\n");
        oDocument.write('<center>'+"\n");
        oDocument.write(XDFormSubmitButtons());
        oDocument.write('</center>'+"\n");
        oDocument.write('</td>'+"\n");
        oDocument.write('</tr>'+"\n");
        oDocument.write('</TABLE>');
        oDocument.write('</body>'+"\n");
        oDocument.write('</html>'+"\n");
        oDocument.close();
        XD_gnFrameHeight='85';
        return true;
}

function BuildCreate()
{
        var oDocument = FrameObject();
        HTMLGenericStart(oDocument);

        if (XD_gbExtraHelp)
        {
                oDocument.write(XDHelp(XD_gsHelpCreateFolder));
        }

        oDocument.write('<form name="form_create" action="/cgi-
bin/folder_create.cgi" method="POST" onSubmit="return
parent.parent.parent.XDCheckFormInput();" target="centerview">');
        var results = '';
        results += '<input type="hidden" name="sFolderCurrent" value="'+
XDSelectedFolder() +'">\n';
        oDocument.write(results);
        oDocument.write('<tr><td valign=center><B>'+ XD_gsFolderName +':</b>');
        oDocument.write('<input type="text" name="sFolderNew" value=""><br>');
        oDocument.write(XDFormSubmitButtons());
        oDocument.write('</td></tr>');

        oDocument.write('</TABLE>');
        oDocument.write('</body>'+"\n");
        oDocument.write('</html>'+"\n");
        oDocument.close();
        XD_gnFrameHeight='85';
        return true;
}

function BuildRename()
{
        var oDocument = FrameObject();
        HTMLGenericStart(oDocument);

        if (XD_gbExtraHelp)
        {
                oDocument.write(XDHelp(XD_gsHelpFolderRename));
        }
```

```
        oDocument.write('<form method="POST" name="form_rename" action="/cgi-
bin/selected_rename.cgi" onSubmit="return
parent.parent.parent.XDCheckFormInput();"');
        oDocument.write(' target="centerview" value="'+XDSelected()+'">\n');
        var results = '';
        results += '<input type="hidden" name="sFolderCurrent"
value="'+XDSelectedFolder()+'">\n';
        oDocument.write(results);
        oDocument.write('<tr><td valign=center><B>' + XD_gsNewName + ':</b>');
        oDocument.write('<input type="hidden" name="sItemCurrent" value="'+
XDSelected() +'">\n');

        if (XDProfileEditExtensions)
        {
              oDocument.write('<input type="text" name="sItemNew" value="' +
XDSelectedThingName()+'">\n');
              oDocument.write('<input type="hidden" name="sItemExtension"
value="">\n');
        }
        else
        {
              oDocument.write('<input type="text" name="sItemNew"
value="'+XDSelectedThingNameMinusExtension()+'">'+XDSelectedThingNameExtensio
n()+'\n');
              oDocument.write('<input type="hidden" name="sItemExtension"
value="'+XDSelectedThingNameExtension()+'">\n');
        }
        oDocument.write(XDFormSubmitButtons());
        oDocument.write('</td></tr>');
        oDocument.write('</TABLE>');
        oDocument.write('</body>'+"\n");
        oDocument.write('</html>'+"\n");
        oDocument.close();
        XD_gnFrameHeight='85';
        return true;
}

function BuildDelete()
{
        var oDocument = FrameObject();
        HTMLGenericStart(oDocument);

        var pathToFile = XDSelected();
        var lastSlash = pathToFile.lastIndexOf('/');
        var file = pathToFile.substring(lastSlash+1,pathToFile.length);

        if (XD_gbExtraHelp)
        {
              oDocument.write(XDHelp(XD_gsHelpDelete));
        }
        oDocument.write('<form name="form_delete" action="/cgi-
bin/selected_delete.cgi" method="POST" onSubmit="return
parent.parent.parent.XDCheckFormInput();" target="centerview">');
        var results = '';
        results += '<input type="hidden" name="sFolderCurrent" value="'+
XDSelectedFolder() +'">\n';
        oDocument.write(results);
        oDocument.write('<tr><td valign=center><B>' + XD_gsSureDelete + ' ' +
file + '?</b>');
        oDocument.write('<input type="hidden" name="sItemCurrent" value="' +
XDSelected() + '"><br>');
        oDocument.write('<input type="hidden" name="sFolderCurrent" value="' +
XDSelectedFolder() + '"><br>');
```


3NSDOCID: <WO 01333381A1 >

```
      oDocument.write(XDFormSubmitButtons());

      oDocument.write('</td></tr>');
      HTMLGenericEnd(oDocument);
      XD_gnFrameHeight='85';
      return true;
}


function BuildExplorer (grove,sStartDirectory)
{
      var returnValue = true;

      if (XD_gsAction == 'Upload')
      {
            returnValue = BuildUpload();
      }
      else if (XD_gsAction == 'Create')
      {
            returnValue = BuildCreate();
      }
      else if (XD_gsAction == 'Rename')
      {
            returnValue = BuildRename();
      }
      else if (XD_gsAction == 'Delete')
      {
            returnValue = BuildDelete();
      }
      else
      {
            var result = '';
            var nDepth = -2;

            result += '<TABLE compact border=0 cellspacing=0 cellpadding=4
width="'+ XD_gnExplorerTableWidth +'">\n';
            result += XDFormSubmitButtons(1);

            result += "<tr><th align=\"left\">"+ XDExplorerFont() + '<font
size="2">' + XDPossesive(XD_gsFirstName + ' ' + XD_gsLastName) + " X:drive
<BR>"
            +XDDiskTotal()+" "+XD_gsCapacity+", "
            +XDDiskFree()+" "+XD_gsRemaining
            +"</th><th align=\"left\">"+


              XDExplorerFont()+'<font size="2">'+ XD_gsSize + "</th><th
align=\"left\">"+
              XDExplorerFont()+'<font size="2">'+ XD_gsLastModified +
"</th></tr>\n";
            result += dotag(grove, sStartDirectory, nDepth);
            result += "</TABLE>\n";
            XD_sNewdoc = result;

            show();

                //johngaa 11/22/99
                //Highlight bug fix
                if (XD_gsXOffset || XD_gsYOffset)
                {
                  XD_goFrameFileExplorer.scrollTo(XD_gsXOffset,XD_gsYOffset);
                }
                //end of johngaa bug fix
```

```
        }
        return returnValue;
}

function XDPossesive(name)
{
        var length = name.length;
        var lastChar = name.charAt(length-1);
        var possesive=name + "'s";
        if (lastChar == 's')
              {
              possesive = name + "'";
              }
        return possesive;
}

function XDExplorerFont()
    {
    return '<font face="verdana, arial, sans">';
    }

// constructs the HTML from the file explorer from the parsed XML
function dotag(tag, path, nDepth)
{
      path += '/' + tag.name;

      var result = '';
      var sCellColor = new String();
      var sIconImage = new String();
      var sFolderPointer = new String();
      var fileSize = new String();
      var fileString = new String();

      var sDate;    // The last modified date and time stamp


        //johngaa 11/23/99
        //highlight netscape bug fix
      // var sFlipFunction = new String('parent.parent.parent.flip(' +
tag.uid + ')');
        if (navigator.appName == "Netscape")
        {
         var sFlipFunction = new String('parent.parent.parent.flip(' +
tag.uid + ',window.pageXOffset,window.pageYOffset)');
        }
        else
        {
         var sFlipFunction = new String('parent.parent.parent.flip(' +
tag.uid + ',document.body.scrollLeft,document.body.scrollTop)');

        }

        //johngaa orginal 11/22/99
        //highlight netscape bug fix
      //var sSelectToggleFunction = new
String('parent.parent.parent.XDselectToggle(' + tag.uid + ')');
        if (navigator.appName == "Netscape")
        {
         var sSelectToggleFunction = new
String('parent.parent.parent.XDselectToggle(' + tag.uid +
',window.pageXOffset,window.pageYOffset)');
        }
```


BNSDOCID: <WO 01333381A1 >

```
        else
        {
         var sSelectToggleFunction = new
String('parent.parent.parent.XDselectToggle(' + tag.uid +
',document.body.scrollLeft,document.body.scrollTop)');
        }
        //end of johngaa bug fix

      // If the object is selected,
      // then add it to the selected arrays
      // and up the selected counts
      // and set the cell color to selected

      //set background color of the cells depending on status:  selected,
move or at rest
      if (tag.attributes.selected)
      {
            XD_gnSelectedCount=1;
            sCellColor =XD_gsSelectedColor;
            XD_gsSelectedList += PathRemovePrefix(path) + '+';

            if (tag.attributes.folder)
            {
                  XD_gnSelectedFolderCount=1;
                  XD_gnSelectedFolderID = tag.uid;
                  XD_gsSelectedFolderList += PathRemovePrefix(path) + '+';
            }
            else
            {
                  XD_gnSelectedFileCount=1;
            }
      }
      else if (tag.attributes.move)
      {
            // ELSE IF, it is set to move,
            // Then change the colors and
            sCellColor = XD_gsMoveSelectedColor;
      }
      else
      {
            // ELSE, set the cell color to not selected
            sCellColor = XD_gsNotSelectedColor;
      }


      if (tag.attributes.folder)
      {
            // SET special graphics and links for folder.
            nDepth++;

            if (tag.attributes.show)
            {
                  if (tag.attributes.move)
                  {
                        // The folder is open
                        sFolderPointer =  '<IMG SRC="' +
XD_gimgOpenFolderPointer + '" BORDER="0">\n';
                        sIconImage = '<IMG SRC="' + XD_gimgOpenFolder +'"
BORDER="0" ALIGN="absmiddle" '+"\n\t"+ 'HSPACE="2" VSPACE="0" HEIGHT="16"
WIDTH="16">';
                  }
                  else
                  {
```


BNSDOCID: <WO 01333381A1 >

```
                        sFolderPointer =  '<A HREF="javascript:' +
sFlipFunction + ';"><IMG SRC="' + XD_gimgOpenFolderPointer + '"
BORDER="0"></A>\n';
                        sIconImage = '<IMG SRC="' + XD_gimgOpenFolder +'"
BORDER="0" ALIGN="absmiddle" '+"\n\t"+ 'HSPACE="2" VSPACE="0" HEIGHT="16"
WIDTH="16">';
                  }
            }
            else
            {
            sFolderPointer =  '<A HREF="javascript:' + sFlipFunction +
';"><IMG SRC="' + XD_gimgClosedFolderPointer + '"' +"\n"+ '
BORDER="0"></A>\n';
            sIconImage = '<IMG SRC="' + XD_gimgFolder + '" BORDER="0"
ALIGN="absmiddle" '+"\n\t"+ 'HSPACE="2" VSPACE="0" HEIGHT="16" WIDTH="16">';
            }
      }
      else
      {
            // This is a file and not a folder so show a FILE icon and do not
show any + or -
            sFolderPointer = ExplorerBlankFolderPointer();
            sIconImage = '<IMG SRC="' + XD_gimgFile + '" BORDER="0"
ALIGN="absmiddle" '+"\n\t"+ 'HSPACE="4" VSPACE="0">';
      }



      if (tag.attributes.size)
      {
            // SET file size indicator is attribute is present
            fileSize = XDExplorerFont()+tag.attributes.size+'k';
      }
      else
      {
            fileSize = ' ';
      }

      if (tag.attributes.lastModified)
      {
            sDate = tag.attributes.lastModified;
      }
      else
      {
            sDate = ' ';
      }

      if (tag.attributes.move)
      {
            fileString= sIconImage;
      }
      else
      {
            fileString = '<A HREF="javascript:' + sSelectToggleFunction +
';">'+ '\n' + sIconImage;
      }

      if ((tag.attributes.folder) || (!XDAction('Move')) ||
(tag.attributes.move))
      {
            // ONLY show IF it is (a folder or not in moving)
            // OR the object is question is being moved.
            result += '<A NAME="' + tag.name + '"></A><TR>';
```


3NSDOCID: <WO 0133381A1 >

```
            result += '<TD BGCOLOR="' + sCellColor + '"
valign="absmiddle"><p>';
            result += "\n";
            result += "\n";
            result += _indent(nDepth);
            result += sFolderPointer;
            result += fileString;
            result += XDExplorerFont();
            result += '<FONT SIZE="2">';
            result += tag.name;
            result += '</A></TD>';
            result += "\n";
            result += "\n";
            result += '<TD BGCOLOR="' + sCellColor + '"
valign="absmiddle"><p><FONT SIZE="2">' + fileSize + '</FONT></TD>';
            result += '<TD BGCOLOR="' + sCellColor + '"
valign="absmiddle"><p><FONT SIZE="2">';
            result += XDExplorerFont();
            result += sDate;
            result += "</FONT></td>\n";

            result += '</TR>';
            result += "\n";
      }

      if (tag.attributes.show)
      {
            for (var i = 0; i < tag.contents.length; i++)
            {
                  if (tag.contents[i].type == "element")
                  {
                        // To sort we simply recursivly call ourselves with
the next element
                        // in the sort order
                        result += dotag(tag.contents[i], path, nDepth);
                        result += "\n";

                  }
            }
      }

      return result;
}


function ExplorerBlankFolderPointer ()
    {
    return '<IMG SRC="/images/explorer/fnot.gif" WIDTH=15 HEIGHT=15
BORDER=0>\n';
    }

// returns a true if the tag has any children that are selected
function XDopenChild(tag, children)
    {
    var result = false;

    if (children)
        {
            if ((tag.attributes.selected) || (tag.attributes.move))
            {
                  //added so user can close folder if items are selected
                  //deselects item in folder if folder is closed
                  tag.attributes.selected=false;
```

```
                //original
                return true;
            }
        }

    for (var i = 0; i < tag.contents.length; i++)
        {
        if (tag.contents[i].type == "element")
            {
            if (XDopenChild(tag.contents[i], 1))
                {
                //added so user can close folder if items are selected
                //deselects item in folder if folder is closed
                grove.index[i].attributes.selected = false;
                return false;

                //original
                //return true;
                }
            }
        }

    return result;

    }


function _indent (count)
    {
    var spaces = '';
    for (i=0; i<=count; i++)
        {
        spaces += '    ';
        }
    return spaces;
    }

// This is called when a item name is clicked,
// either flipping it open or closed

//original johngaa 11/23/99
//highlight netscape bug fix
//original function flip(id)
function flip(id,xoffset,yoffset)
    {
    //johngaa 11/23/99
    //highlight netscape bug fix
    XD_gsYOffset = yoffset;
    XD_gsXOffset = xoffset;

    //end of johngaa add
    XDresetSelected();

    // before closing, check to see if it has selected children.
    // If child is selected, then do not allow to close dir.
    if (!XDopenChild(grove.index[id], 0))
       {
            if (grove.index[id].attributes.show == 1)
            {
                grove.index[id].attributes.show = 0;
            }
            else
```


BNSDOCID: <WO 0133381A1 >

```
            {
                grove.index[id].attributes.show = 1;
            }
        }

    BuildExplorer(grove,XD_gsRootDirectory);
    }

// This is called when an item icon is clicked, causing
// it to toggle between selected and not selected

//original johngaa 11/22/99
//highlight netscape bug fix
//function XDselectToggle(id)
function XDselectToggle(id,xoffset,yoffset)
{

    //johngaa 11/22/99
    //highligt bug fix
    XD_gsYOffset = yoffset;
    XD_gsXOffset = xoffset;
    //end of johngaa bug fix


    // Martin to solve bug where we log in and we get the error grove.index
    // is not an object
    if (! grove.index)
        {
        return;
        }

      if (id>=0)
      {
            XDresetSelected();

            if (grove.index[id].attributes.selected)
            {
                grove.index[id].attributes.selected = false;
            }
            else
            {
                XDresetAllSelected();
                XD_gnSelectedCount++;
                grove.index[id].attributes.selected = true;
                if (grove.index[id].attributes.folder)
                {
                    XD_gnSelectedFolderCount++;
                    grove.index[id].attributes.show = 1;
                }
                else
                {
                    XD_gnSelectedFileCount++;
                }
            }
      }
      else
      {
            XDresetAllSelected();
      }
      //if this is the page generated directly after a login
      //make XDrive the default and select it
      //then reset variable so we no longer select Xdrive as the default
```


NSDOCID: <WO_____0133381A1_I_>

```
        if (XD_gnLogin==1)
        {
              grove.index[0].attributes.selected=true;
              XD_gnLogin=0;
        }

      //this is called every time the file explorer changes
      //including creates, moves, deletes and renames
      //use a setTimeout for NS on NT because otherwise the
      //browser crashes if there is no wait period
      setTimeout("BuildExplorer(grove,XD_gsRootDirectory)",50);
      //BuildExplorer(grove,XD_gsRootDirectory);


}



// function to check to see if the root is selected
function XDRootSelected()
    {
    if (grove.index[0].attributes.selected)
        {
        return true;
        }
    return false;
    }

// This sets a selection to a value
function XDselect (id,value)
    {
    // Martin to solve bug where we log in and we get the error grove.index
    // is not an object
    if (!grove.index)
        {
        return;
        }

    if (grove.index[id].attributes.folder)
        {
        grove.index[id].attributes.selected = true;
        grove.index[id].attributes.show = value;
        }
    }


// DeSelects everything if so that only one thing can be selected
// at a time, unless the the multipleSelect checkbox from myFrom
// is selected.
function XDresetAllSelected()
    {
    var length = grove.index.length;

    for (var i =0; i < length; i++)
        {
        grove.index[i].attributes.selected = 0;
        }
    }

function XDresetAllMovedSelected()
    {
    // Martin bug fix -- after the first login could not show X:drive
    if (!grove.index)
```


INSDOCID: <WO 01333381A1 >

```
        {
        return;
        }

    var length = grove.index.length;

    var oFrame = XD_goFrameUsageInfo;
    for (var i =0; i < length; i++)
        {
        grove.index[i].attributes.move = 0;
        }
    }

// resets the number of selected, called by both flip and XDselectToggle
function XDresetSelected()
    {
    XD_gsSelectedList = '';
    XD_gnSelectedCount = 0;
    XD_gnSelectedFolderCount =0;
    XD_gnSelectedFileCount =0;
    XD_gsSelectedFolderList = "";
    }

function strip(str)
    {
    var A = new Array();

    A = str.split("\n");
    str = A.join("");
    A = str.split(" ");
    str = A.join("");
    A = str.split("\t");
    str = A.join("");

    return str;
    }

function entity(str)
    {
    var A = new Array();

    A = str.split("&");
    str = A.join("&amp;");
    A = str.split("<");
    str = A.join("&lt;");
    A = str.split(">");
    str = A.join("&gt;");

    return str;
    }

function synch (prev_grove, new_grove)
{
    var prev_tag, new_tag, pi, ni;

    if (! prev_grove)
        {
      //set a flag so we know the first time a user logs in
      //there will be no prev_grove in this one case
      //flag is used to show blue bar on XDrive folder only right after
logging in
      XD_gnLogin=1;
      return;
```

```
        }
//NS4.05 doesn't like this syntax
//change to new syntax
//if (! prev_grove.attributes)
    if (prev_grove.attributes!='')
        {
        return;
        }

    if (! new_grove.contents)
        {
        return;
        }

     if (prev_grove.attributes.show)
     {
           pi = 0;

           for (var ni = 0; ni < new_grove.contents.length; ni++)
           {
                 if (new_grove.contents[ni].type == "element")
                 {
                       if (prev_grove.contents[pi])
                       {
                             prev_tag = prev_grove.contents[pi];
                       }

                       if (new_grove.contents[ni])
                       {
                             new_tag = new_grove.contents[ni];
                       }

                       if ((prev_tag) && (new_tag))
                       {
                             if (prev_tag.name == new_tag.name)
                             {
                                   // Make sure the contents for this object
exists before checking them
                                   // to avoid javascript "has no
properties" errors.
                                   if (prev_grove.contents[pi])
                                   {
                                         new_grove.contents[ni].attributes =
prev_grove.contents[pi].attributes;
                                   }
                             }
                             else if (prev_tag.name > new_tag.name)
                             {
                                   pi++;
                             }
                             else
                             {
                                   ni++;
                             }
                       }
                       synch(prev_grove.contents[pi],
new_grove.contents[ni]);
                 }

                 pi++;
           }
     }
}
```

//saveToXdrive.js

```
var win = external.menuArguments;

ExtMen = external.menuArguments;
ExtMenTag = ExtMen.event.srcElement;
ExtMenDoc = ExtMen.document;

var url;


function findAnchor(el) {

  while ((el!=null) && ((el.tagName!="A") && (el.href!="")))
    el = el.parentElement;
  return el;

}


function findUrl() {
   var re;
   var IMGinsideLink = false;

   //alert("Tag name is " + ExtMenTag.tagName);

   switch ( ExtMenTag.tagName ) {
   // if a "LINK", return the link's URL
   case "A" :
      url = ExtMenTag.href;
      break;

   case "TD":
      var el = win.document.selection.createRange();
      a = findAnchor(el.parentElement(0));
      if (a != null)
          {
          url = a.href;
          }
      break;

    // if it was an image, then this gets complicated:
  case "IMG" :

    // check all links to make sure we aren't in one:
     for ( count = 0; count < ExtMenDoc.links.length; count++ )
        if ( ExtMenDoc.links( count ).contains( ExtMenTag ) ) {
           IMGinsideLink = true;
           break;
           }


     // if none was found, return the image URL:
     if ( !IMGinsideLink )
        url = ExtMenTag.src;
     else {

        url = ExtMenDoc.links( count ).href;
     }
     break;
```


BNSDOCID: <WO 0133381A1 ! >

```
    default:
       url = ExtMenDoc.href;
       break;
       }

    // Replace "."
    re = /%2e/g;
    url = url.replace(re, ".");

    // Replace ":"
    re = /%3A/g;
    url = url.replace(re, ".");


    // See if from hotfiles ZD-Net
    if (url.indexOf("hotfiles.zdnet") != -1)
       {
       var startIndex;
       var endIndex;

       startIndex = url.indexOf("refresh_url=");
       if (startIndex != -1)
          {
          startIndex += 12;
          endIndex = url.indexOf("&", startIndex);

          if (endIndex != -1)
             {
             url = url.substring(startIndex, endIndex);
             }
          }
       }
    // see if from "download.com" C-Net
    else if (url.indexOf("download.com") != -1)
       {
       var indexHttp;
       var indexFtp;

       indexHttp = url.lastIndexOf("http://");
       indexFtp = url.lastIndexOf("ftp://");
       index = indexHttp;
       if (indexFtp > indexHttp)
          index = indexFtp;

       //alert( "index is " + index );

       if (index > 0)
          {
          var tempUrl;

          tempUrl = url.substr(index);
          url = tempUrl;
          }
       }


}

findUrl();

//alert("begin");
//alert(url);
```


3NSDOCID: <WO_____0133381A1_I_>

```
// Call X:Drive to perform actual copy

xd_skip(url);
```


BNSDOCID: <WO 0133381A1 >

//secure_login.js

```
//
//  Written 12/1/99
//  Description:
//    Allow users to login securely from the start
//
//

function getState()
{
   //
   //return the value of the checked item
   //called by checkSubmit
   //
   var state;
   if (document.Login.bSecurity[0].checked)
   {
      state = document.Login.bSecurity[0].value;
   }
   else
   {
      state = document.Login.bSecurity[1].value;
   }
   return state;
}

function checkSubmit()
{
      //
      //  checks if secure toggle button is pressed or not
      //  if it is don't allow the submition of the current
      //  form but submit the secureLogin form
      //
       if (getState() == "on")
       {
          document.secureLogin.user.value = document.Login.user.value;
          document.secureLogin.pass.value = document.Login.pass.value;
          document.secureLogin.submit();
          return false;
       }
       else
       {
          return true;
       }
       return false;
}

function writeForm()
{
       //
       //  creates a the secure form
       //
       var fullHostName = XDGetFullHostName();
       var cgiAction = "https://" + fullHostName + "/cgi-bin/login.cgi";
       var formStr;

       formStr = "<form name=\"secureLogin\" method=\"post\" action=\"";
       formStr += cgiAction;
       formStr += "\">";
```

```
        formStr += "<input type=\"hidden\" name=\"user\" value=\"\">";

        formStr += "<input type=\"hidden\" name=\"pass\" value=\"\">";
        formStr += "<input type=\"hidden\" name=\"bSecurity\"
value=\"on\">\n</form>";
        document.writeln(formStr);

}

function clickSecureState()
{
        var tempL = new String(document.location);
        var start = -1;
        start = tempL.indexOf("https");
        if (start != -1)
        {
           if (document.Login.bSecurity[0].value == "on")
           {
              document.Login.bSecurity[0].click();
           }
           else
           {
              document.Login.bSecurity[1].click();
           }
        }
}
```

//skip.js

```
//**************************************************************************
// xd_skip: Popup a skip the download window for the X:Drive skip
// the download service.
//
// Inputs:
//   file_url  : the absolute URL of the file to fetch
//   file_name : the name to call the stored file
//   file_size : the file size in KB
//
// Outputs:
//   none
//**************************************************************************

var skipPartner;
var skipLanguage;
var height = 200;
var width = 575;

function xd_change_location (url)
{
    document.location=url;

}


function xd_skip(file_url,file_name,alt_url,catid,gid,sid,langauge,partner)
{
                                                    (
    var base_url = "http://www.xdrive.com/cgi-bin/skip_the_download.cgi";

    if (! file_name || file_name.length == 0)
      {
          var ii;
          for (ii=0; ii<= file_url.length; ii++)
            {
                if (file_url.charAt(ii) == '/')
                  {
                      file_name = '';
                  }
                else
                  {
                      file_name = file_name + file_url.charAt(ii);
                  }
            }
      }

    var params = "FILEURL="    + escape(file_url) +
      "&FILENAME=" + escape(file_name) +
      "&ALTURL=" + escape(alt_url);

    if (langauge) {
      skipLangauge = langauge;
    }

    if (partner) {
      skipPartner = partner;
    }

    if (skipPartner)
```

```
    {
        params = params + "&STDPARTNER=" + escape(skipPartner);
    }

  if (skipLanguage)
    {
        params = params + "&LANG=" + escape(skipLanguage);
    }

  if (catid)
    {
        params = params + "&CATID=" + escape(catid);
    }

  if (gid)
    {
        params = params + "&GID=" + escape(gid);
    }

  if (sid)
    {
        params = params + "&SID=" + escape(sid);
    }

  if(skipPartner == 'cnet')
    {
        height = 235;
        width = 600;
    }

  url = base_url + "?" + params;
  var d = new Date();
  var name = d.getTime();

  window.open
       (
       url,
       name,

'toolbar=no,menubar=no,scrollbars=no,fullscreen=no,resizable=no,width=' +
width + ',height=' + height
       );

  return;
}
```


BNSDOCID: <WO_____0133381A1_I_>

//skipthedownload.js

```
<SCRIPT LANGUAGE="JavaScript"
SRC="http://www.xdrive.com/js/skip.js"></SCRIPT>
<SCRIPT LANGUAGE="JavaScript" defer>

var win = external.menuArguments;

ExtMen = external.menuArguments;
ExtMenTag = ExtMen.event.srcElement;
ExtMenDoc = ExtMen.document;

var url;


function findAnchor(el) {

  while ((el!=null) && ((el.tagName!="A") && (el.href!="")))
    el = el.parentElement;
  return el;

}


function findUrl() {
   var re;
   var IMGinsideLink = false;

   //alert("Tag name is " + ExtMenTag.tagName);

   switch ( ExtMenTag.tagName ) {
   // if a "LINK", return the link's URL
   case "A" :
      url = ExtMenTag.href;
      break;

   case "TD":
      var el = win.document.selection.createRange();
      a = findAnchor(el.parentElement(0));
      if (a != null)
          {
          url = a.href;
          }
      break;

    // if it was an image, then this gets complicated:
  case "IMG" :

    // check all links to make sure we aren't in one:
     for ( count = 0; count < ExtMenDoc.links.length; count++ )
        if ( ExtMenDoc.links( count ).contains( ExtMenTag ) ) {
           IMGinsideLink = true;
           break;
           }


     // if none was found, return the image URL:
     if ( !IMGinsideLink )
        url = ExtMenTag.src;
     else {
```


NSDOCID: <WO_____0133381A1_I_>

```
            url = ExtMenDoc.links( count ).href;
         }
         break;

      default:
         url = ExtMenDoc.href;
         break;
         }

      // Replace "."
      re = /%2e/g;
      url = url.replace(re, ".");

      // Replace ":"
      re = /%3A/g;
      url = url.replace(re, ".");


      // See if from hotfiles ZD-Net
      if (url.indexOf("hotfiles.zdnet") != -1)
         {
         var startIndex;
         var endIndex;

         startIndex = url.indexOf("refresh_url=");
         if (startIndex != -1)
            {
            startIndex += 12;
            endIndex = url.indexOf("&", startIndex);

            if (endIndex != -1)
               {
               url = url.substring(startIndex, endIndex);
               }
            }
         }
      // see if from "download.com" C-Net
      else if (url.indexOf("download.com") != -1)
         {
         var indexHttp;
         var indexFtp;

         indexHttp = url.lastIndexOf("http://");
         indexFtp = url.lastIndexOf("ftp://");
         index = indexHttp;
         if (indexFtp > indexHttp)
            index = indexFtp;

         //alert( "index is " + index );

         if (index > 0)
            {
            var tempUrl;

            tempUrl = url.substr(index);
            url = tempUrl;
            }
         }


}

findUrl();
```


BNSDOCID: <WO 01333814A1 >

```
//alert("begin");
//alert(url);

// Call X:Drive to perform actual copy

xd_skip(url);

</script>
```

//submit.js

```
/*****************************************************************************
*
* Submit.JS: This javascript class is for all the actions associated with
* buttons.  This class may either open a new window or submit an existing
* form for server parsing.
*****************************************************************************
/



/*****************************************************************************
 * XDCheckFormInput() - check upload/rename/create input.
 *   if there are errors, give then alert. if not, submit

*****************************************************************************/

function XDCheckFormInput()
{
      //make sure user is not allowed to upload a blank file
      if (XD_gsAction == 'Upload')
      {
            sFormName = XD_goFrameFileExplorer.document.form_upload;
            if(sFormName.file_to_upload_01.value == '')
            {
                  alert(XD_gsAlertUploadEmptyFile);
                  return false;
            }
      }
      //make sure user cannot create a blank file
      else if (XD_gsAction == 'Create')
      {
            sFormName = XD_goFrameFileExplorer.document.form_create;
            if (sFormName.sFolderNew.value=='')
            {
                  alert(XD_gsAlertCreateEmptyFile);
                  return false;
            }
      }
      else if (XD_gsAction == 'Rename')
      {
            sFormName = XD_goFrameFileExplorer.document.form_rename;
            //do not allow user to rename file the same name it already has
            //find just the file name to compare to what was input

            var lastSlash=sFormName.sItemCurrent.value.lastIndexOf('/');

            //if this is a folder of user may edit file extensions, use this
code
            if ((parent.parent.XDProfileEditExtensions) ||
(XD_gnSelectedFileCount==0))
            {
                  //allow user to edit extensions so check everything after
the
                  //last slash
                  var
fileName=sFormName.sItemCurrent.value.substring(lastSlash+1,sFormName.sItemCu
rrent.value.length);

                  if (fileName == sFormName.sItemNew.value)
```


BNSDOCID: <WO 0133381A1 I >

```
                {
                        alert(XD_gsAlertRenameSameName);
                        return false;
                }
            }
            else
            {
                //do not allow user to edit extensions so need to find last
'.' as well
                var lastDot=sFormName.sItemCurrent.value.lastIndexOf('.');
                var
fileName=sFormName.sItemCurrent.value.substring(lastSlash+1,lastDot);

                if (fileName == sFormName.sItemNew.value)
                {
                        alert(XD_gsAlertRenameSameName);
                        return false;
                }
            }

            //check to see if user is trying to name the file/folder nothing
            //give em an error message if so
            if (sFormName.sItemNew.value == '')
            {
                alert(XD_gsAlertRenameNothing);
                return false;
            }
        }
        else { }

        XD_gsAction = '';
        //sFormName.submit();
        return true;
}

function XDSubmitView (sFormName) {
    // Always start by checking the status and if the status is not active
then
    // return and do not perform any actions.
    //if (! XDfunctionStatus(parent.parent.XD_TOOLBAR_BUTTON_VIEW))

    if (! XDfunctionStatus(XD_TOOLBAR_BUTTON_VIEW)) {
        return false;
    }

    var sFixed = '';
    var sFileName = XDSelected();

    for (i = 0;i <= sFileName.length;i++) {
        if (sFileName.charAt(i) == ' ') {
            sFixed += '+';
      }
      else {
          sFixed += sFileName.charAt(i);
      }
    }

    // URL encode/escape string
    sFixed = escape(sFixed);

    var sURL = '/cgi-bin/file_load.cgi/'+sFixed+'?sFileCurrent=' + sFixed +
"&source=www.fileExplorer.view";
```

```
    XDReaderShow(sURL,400,400);
    return true;
}

// Justin's upload status stuff.
function openUpload(form_check, url, name, f) {

   if (! form_check) {
      return false;
   }

   var form_length = f.length;
   var cnt = 0;

   for(var i = 0; i < f.length; i++) {
      var e = f.elements[i];

      if ( (e.type == "file") && (e.value.length > 0) )  {
         cnt++;
      }
   }

   var amp_nof = "&nof=";
   url += amp_nof + cnt;

   msgWindow =
window.open(url,name,'width=350,height=190,toolbar=no,resize=no,scrollbars=no
');

   return true;
}

function createRandomID () {
   substr_rand_num = new String(Math.random());

   return substr_rand_num.substring(2,14);
}

function XDSubmitDownload ()
{
      // Always start by checking the status and if the status is not
      // active then return and do not perform any actions.
      //if (! XDfunctionStatus(parent.parent.XD_TOOLBAR_BUTTON_DOWNLOAD))
      if (! XDfunctionStatus(XD_TOOLBAR_BUTTON_DOWNLOAD))
      {
            return false;
      }

      var sFileName = XDSelected();
      var oDocument = XD_goFrameData.document;
      var sExtraPath;

      sExtraPath = '/'+sFileName;

      HTMLGenericStart(oDocument);
      oDocument.write('<form name="form_download" target="userData"
method="POST" action="/cgi-bin/file_load.cgi' + sExtraPath + '"
enctype="multipart/form-data">'+"\n");
      oDocument.write('<input type="hidden" name="sFileCurrent"
value="'+sFileName+'">');
      oDocument.write('<input type="hidden" name="mime" value="download">');
      oDocument.write('<input type="hidden" name="source"
value="www.fileExplorer.download">');
```


BNSDOCID: <WO 0133381A1 I >

```
        oDocument.write('<input type="hidden" name="sFolderCurrent" value="' +
XDSelectedFolder() + '">');
          //johngaa test add 12/2/99
          oDocument.write('</form>');
          //end of johngaa add
        HTMLGenericEnd(oDocument);
        oDocument.forms[0].submit();
        return true;
}

function XDSubmitNewFolder(sFormName)
{
        var sNewFolderName = prompt(XD_gsRenamePrompt);
        XDFormSetGeneric(sFormName);
        XDFormSetFolderNew(sFormName,sNewFolderName);
        sFormName.submit();
}

/*****************************************************************************
 * XDItemDelete: Delete an item (no prompting here)

*****************************************************************************/

function XDItemDelete()
{
        var sFileName = XDSelectedList();
        XDFormSetGeneric(sFormName);
        XDFormSetThingName(sFormName);
        sFormName.submit();
}

/*****************************************************************************
 * XDSubmitDelete: Verify they can delete the selected item and then
 *    redirect to a web page that will prompt them to delete.

*****************************************************************************/

function XDSubmitDelete(sFormName)
{
        if (! XDAllowChange(XDSelected()))
        {
                alert(XD_gsAlertDeleteFolder);
                return false;
        }
        location = "delete_prompt.html";
        return true;
}

function XDBufferChange(sFormName,sType)
{
        // We popup a new window for them to select a folder from
        XDFormSetBufferAction(sFormName,sType);
        parent.parent.XDopenFolderSelectWindow();
        XDFormSetSelectedFiles(sFormName);
}

function XDSubmitBufferChange (sFolderTo)
{
        // This method is being access across frames so we cannot easily pass
the form name
        // so instead we set a variable equal to what the object would have
been.
        sFormName = window.frames[XD_gsControlFrame].document.form_buffer;
```


INSDOCID: <WO_____0133381A1_I_>

```
        XDFormSetGeneric(sFormName);
        XDFormSetFolderNew(sFormName,sFolderTo);
        sFormName.submit();
}

function XDSubmitMove(sFormName)
{
        XDFrameMove();
        BuildExplorer(grove,XD_gsRootDirectory);
}

/*****************************************************************************
 * XDPopupShow: Show a popup browser

*****************************************************************************/

function XDReaderShow(sURL, nHeight, nWidth) {

        nWidth = 500;
        nHeight = 600;

        var r = window.open(sURL,"reader","location=no,toolbar=no,menubar=no,"+

"status=no,resizable=yes,scrolling=yes,scrollbars=yes,"+
                        "width="+nWidth+",height="+nHeight);

        //*** make sure the opener knows who the parent is
        if (r.opener == null) r.opener = self;

        //*** focus on the newly created window
        //r.focus();
}

function FrameObject()
{
        return XD_goFrameFileExplorer.document;
}

function HTMLGenericStart (oDocument)
{
        oDocument.open("text/html");
        oDocument.write('<html>');
        oDocument.write("<head>\n");
        oDocument.write("<link rel=stylesheet href='/css/style_back.css'
type='text/css'>\n");
        oDocument.write("</head>\n");
        oDocument.write('<body background="' + XDBackgroundImage() + '"
bgcolor="' + XDBackgroundColor() + '">'+"\n");
        oDocument.write('<table><tr>');
}

/*****************************************************************************
 * HTMLGenericEnd:

*****************************************************************************/

function HTMLGenericEnd (oDocument)
{
        oDocument.write('</table>');
        oDocument.write('</body>'+"\n");
        oDocument.write('</html>'+"\n");
        oDocument.close();
}
```


BNSDOCID: <WO 0133381A1 I >

```
function XDBuildForm()
{
      var form = '';
      var sSubmitButton = '/images/submit.gif';

      if (XDAction('Move'))
      {
            form += '<form name="form_buffer" action="/cgi-
bin/buffer_paste.cgi"' +
                  ' method="POST" target="centerview"'+
                  ' parent.parent.parent.XDReset();">'+"\n";
                  form += '<input type="hidden" name="sFile"
value="'+XD_gsMoveSelectedList+'">';
            sSubmitButton = '/images/move.gif';
            XD_gnFrameHeight = '40';
      }

      form += '<input type="hidden" name="sFolderCurrent" value="' +
XDSelectedFolder() + '">';
      form += '<input type="hidden" name="type" value="move">';
      form += '<input type="hidden" name="sItemCurrent" value="">';
      form += '<input type="hidden" name="sFolderNew" value="">';

      form += '<p><INPUT TYPE="button" VALUE="' + XD_gsButtonSubmit + '"
onClick="parent.parent.parent.XDSetMoveForm(document.forms[0]);">'+
            '<INPUT TYPE="button"  VALUE="' + XD_gsButtonCancel + '"
onClick="parent.parent.parent.XDReset();
parent.parent.parent.XDRefreshExplorer();">'+
            '</td>';
      form += '</form>';

      return form;
}

function XDSetMoveForm (oForm)
{
      oForm.sItemCurrent.value = XDSelectedToMove();
      oForm.sFolderNew.value = XDSelectedFolder();

        // adding check for target folder
        if (XD_gsSelectedFolderList.length > 0)
        {
         //check to see if the user is attempting to move the file into
         //the folder it is already in - can't do that
         var slash=oForm.sItemCurrent.value.lastIndexOf("/");
         var fileDirectory=oForm.sItemCurrent.value.substring(0,slash);

         if (oForm.sFolderNew.value == fileDirectory)
         {
            alert(XD_gsAlertMoveSameFolder);
         }
         else
         {
               // makes sure that the target is not the same as
               // source
               if (oForm.sFolderNew.value == oForm.sItemCurrent.value)
               {
                  alert(XD_gsAlertNoTargetFolder);
               }
               else
               {
```


3NSDOCID: <WO_____0133381A1_I_>

```
                //call reset and submit form only if they can actually move
the file
                //else they only get the dialog warning box
                XDReset();
                oForm.submit();
                 }
          }
          }
          else
          {
             alert(XD_gsAlertNoTargetFolder);
          }
}

function XDFormSubmitButtons (generic)
{
      var HTMLString = '';
      var FormString = '';
      var TotalString = '';

      // Grab the appropriate HTML
      if (XDAction('Move'))
      {

            if (XD_gbExtraHelp)
            {
                  HTMLString = XDHelp(XD_gsHelpMoveHTML);
            }

            FormString = XDBuildForm();
            return HTMLString + "</TD></TR><TR><TD>" + FormString;
      }
      else if (XDAction('Rename'))
            {
            if (XD_gbExtraHelp)
                  {
                  HTMLString = XDHelp(XD_gsHelpFolderRename);
                  }
            }
      else if (XD_gbExtraHelp)
      {
            if (XD_gnSelectedCount > 0 && ! XDRootSelected())
            {
                  if (XD_gnSelectedFileCount)
                  {
                        HTMLString = XD_gsHelpFileSelected;
                  }
                  else
                  {
                        HTMLString = XD_gsHelpFolderSelected;
                  }
            }
            else
            {
                  if (XD_gsFirstTime)
                  {
                        HTMLString = XD_gsHelpFirstTimeEnter;
                  }
                  else
                  {
                        HTMLString = XD_gsHelpEnter;
                  }
            }
```


RNSDOCID: <WO 01333181A1 | >

```
            // Format the help box
            HTMLString = XDHelp(HTMLString);
      }

      if (! generic)
      {
            var sSubmitButton;
            sSubmitButton = '/images/submit.gif';
            if (XDAction('Rename'))
            {
                  sSubmitButton = XD_gsButtonRename;
            }
            else if (XDAction('Upload'))
            {
                  sSubmitButton = XD_gsButtonUpload;
            }
            else if (XDAction('Create'))
            {
                  sSubmitButton = XD_gsButtonCreate;
            }
            else if (XDAction('Delete'))
            {
                  sSubmitButton = XD_gsButtonDelete;
            }

            return '<p><input type="submit" value="'+sSubmitButton+'">\n'+
                  '<input type=button value="' + XD_gsButtonCancel + '"
onclick="'+
                  'parent.parent.parent.XDReset(); '+
                  'parent.parent.parent.XDRefreshExplorer();">\n</FORM>';

      }

      TotalString = HTMLString + FormString;
      return TotalString;
}

function XDHelp (sHelp)
{
      return '<tr><td height=50 bgcolor="' + XD_gsExplorerHelpBackgroundColor
+ '" colspan=3 valign=top><FONT FACE="arial, helvetica" size="-1"
color="#666666"><b>' + XD_gsInstructions + '</b>\n' + sHelp + '\n</td></tr>';
}


/*****************************************************************************
 * XDFrameShare: Share a file with another user

*****************************************************************************/

function XDFrameShare()
{

      //if (! XDfunctionStatus(parent.parent.XD_TOOLBAR_BUTTON_SHARE))
      if (! XDfunctionStatus(XD_TOOLBAR_BUTTON_SHARE))
            {
            return false;
            }

      var sFile = XDEscapeCharacters(XDSelected());
```

```
        frames['centerview'].document.location  = '/cgi-
bin/share_a_file.cgi?help=' +
              XD_gbExtraHelp + '&sFileName=' + sFile;
        return true;
}

function XDCheck (sName)
{
        return "if (! XDAllowChange("+sName+") {return false;)";
}

function XDSelectedThingName()
{
        var r = '';
        var s = XDSelected();
        for (var i=0; i<s.length;++i)
        {
              var ch=s.charAt(i);
              if (ch == '/')
              {
                    r = '';
              }
              else
              {
                    r += ch;
              }
        }
        return r;
}

function XDSelectedThingNameMinusExtension()
{
      var r = '';
      var b = false; // found first time
      var s = XDSelectedThingName();
      for (var i=s.length;i>=0;--i)
      {
            var ch=s.charAt(i);
            if (ch == '.' && ! b)
            {
                  b = true;
                  r = '';
            }
            else
            {
                  r = ch + r;
            }
      }
      return r;
}

function XDSelectedThingNameExtension()
{
      var r = '';
      var s = XDSelectedThingName();
      var bFoundDot = false;
      for (var i=0;i<s.length;++i)
      {
            var ch = s.charAt(i);
            if (ch == '.')
            {
                  r = '';
                  bFoundDot = true;
```


BNSDOCID: <WO 0133381A1 >

```
            }
            else
            {
                  r += ch;
            }
      }
      if (bFoundDot == true)
      {
            return '.'+r;
      }
      else
      {
            return '';
      }
}

/*****************************************************************************
 * XDFrameUpload: Refresh the action frame with a form to perform the file
 * upload and set the form values during the HTML creation itself.

*****************************************************************************/

function XDFrameUpload(sCurrentFolder)
{
      //if (! XDfunctionStatus(parent.parent.XD_TOOLBAR_BUTTON_UPLOAD))
      if (! XDfunctionStatus(XD_TOOLBAR_BUTTON_UPLOAD))
      {
            return false;
        }

      XDActionStart('Upload');
      XD_gnFrameHeight = '1';
      frames['centerview'].document.location = XDCenterView();
      return true;
}

function XDFrameFolderNew ()
{
      //if (!XDfunctionStatus(parent.parent.XD_TOOLBAR_BUTTON_NEWFOLDER))
      if (!XDfunctionStatus(XD_TOOLBAR_BUTTON_NEWFOLDER))
      {
            return false;
      }

      XDActionStart('Create');
      XD_gnFrameHeight = '1';
      frames['centerview'].document.location = XDCenterView();
      return true;
}

function XDFrameRename ()
{
      if (! XDAllowChange(XDSelected()))
      {
            alert(XD_gsAlertRenameFolder);
            return false;
      }
      //if (! XDfunctionStatus(parent.parent.XD_TOOLBAR_BUTTON_RENAME))
      if (! XDfunctionStatus(XD_TOOLBAR_BUTTON_RENAME))
      {
            return false;
      }
```

```
        XDActionStart('Rename');
        XD_gnFrameHeight = '1';
        frames['centerview'].document.location = XDCenterView();
        return true;
}

function XDFrameDeletePrompt()
{
      if (! XDAllowChange(XDSelected()))
      {
            alert(XD_gsAlertDeleteFolder);
            return false;
      }

      //if (! XDfunctionStatus(parent.parent.XD_TOOLBAR_BUTTON_DELETE))
      if (! XDfunctionStatus(XD_TOOLBAR_BUTTON_DELETE))
      {
            return false;
      }

      XDActionStart('Delete');
      XD_gnFrameHeight = '1';
      frames['centerview'].document.location = XDCenterView();
      return true;
}

/*****************************************************************************
 * XDsetSelectedToMove: takes all files that are currently selected and sets
 *  their move attribute

*****************************************************************************/

function XDsetSelectedToMove(tag)
{
      if (tag.attributes.selected)
      {
            tag.attributes.selected = 0;
            tag.attributes.move = 1;
      }

      for (var i = 0; i < tag.contents.length; i++)
      {
            if (tag.contents[i].type == "element")
            {
                  XDsetSelectedToMove(tag.contents[i]);
            }
      }
}

function XDFrameMove()
{
      if (! XDAllowChange(XDSelected()))
      {
            alert(XD_gsAlertMoveFolder);
            return false;
      }

      // XXX
      XD_gsMoveSelectedList = XD_gsSelectedList;
      XD_gsSelectedList = "";
      XDsetSelectedToMove(grove);

      XDActionStart('Move');
```

```
        XD_gnFrameHeight = '1';
        frames['centerview'].document.location = XDCenterView();

        return true;
}


/*****************************************************************************
 * XDBrowserDownloadSupported: Returns true if the browser supports the
 *    download button.  This includes all Netscape versions and IE 5 or later.
 *****************************************************************************/

function XDBrowserDownloadSupported()
{
        return !((navigator.appName == "Microsoft Internet Explorer") &&
                    (parseInt(navigator.appVersion) <= 4 ));
}

function XDProfile(form)
{
        XDProfileEditExtensions = form.elements['bFileExtEdit'].checked;
        XD_gbExtraHelp = form.elements['bExtraHelp'].checked;
        XD_gbMarketing = form.elements['bMarketing'].checked;
        XD_gbNewsletter = form.elements['bNewsletter'].checked;
}

function XDLogout()
    {
    var sUrl = '/cgi-bin/logout.cgi';
    parent.parent.location.href = sUrl;
    }

/*****************************************************************************
*
* XDSelected: Return the currently selected file or folder and remove the
* plus that appears at then end -- used the separate elements in a multi
* file/folder list.
*****************************************************************************
/

function XDSelected()
    {
    return XD_gsSelectedList.substring(0,XD_gsSelectedList.length-1);
    }

function XDSelectedFolder()
    {
        alert(XD_gsLengthofFolder + XD_gsSelectedFolderList.length);
    return
XD_gsSelectedFolderList.substring(0,XD_gsSelectedFolderList.length-1);
    }

function XDSelectedToMove()
        {
        return
XD_gsMoveSelectedList.substring(0,XD_gsMoveSelectedList.length-1);
        }

/*****************************************************************************
* XDCleanupPath: Cleanup the passed path by removing the "/X:drive/" prefix
* and the + postfix.
*****************************************************************************/
```

```
function XDPathCleanup(sPath)
    {
    var sCopy = sPath;
    sCopy = sCopy.substring(9,sCopy.length)
    //sCopy = sCopy.substring(0,sCopy.length-1);
    return sCopy;
    }

function XDDomain ()
        {
        baseAddress = java.net.InetAddress.getLocalHost();
        userDomain = baseAddress.getHostName();
        alert(userDomain.toString());
        }

function XDXdrive ()
        {
        XDDomain();
        return '/cgi-bin/explorer_user_data.cgi';
        }

function XDCenterView ()
        {
        return '/cgi-
bin/frame_generic.cgi?thtml=centerview.thtml&sFrameHeight=' +
XD_gnFrameHeight;
        }

function XDReset ()
        {
        XD_gnSelectedCount = 0;
        XD_gnSelectedFileCount = 0;
        XD_gnSelectedFolderCount = 0;
        XD_gsSelectedList = "";
        XD_gnSelectedFolderID = '';
        XD_gsMoveSelectedList = "";
        XD_gsSelectedFolderList = "";
        XD_gsTargetFolder = "";
        ControlsEnabled = true;
        XDresetAllMovedSelected();
        XDActionEnd();
        }

function XDAllowChange (sFolder)
        {
        if (sFolder == '' || sFolder == '' || sFolder == 'public' || sFolder
== 'private')
                {
                return false;
                }
        return true;
        }

function XDAction (sAction)
        {
        if (XD_gsAction == sAction)
                {
                return true;
                }
        return false;
        }
```

```
// Register a new action
function XDActionStart (sAction)
        {
        XD_gsAction = sAction;
        }

// Clear the current action
function XDActionEnd ()
        {
        XD_gsAction = '';
        }

function XDRefreshExplorer()
    {
            //reset the action before calling this function
            //or the action screen will be drawn
            XDActionEnd();
            XD_gnFrameHeight = '40';
            //also reset if a move has been started but never finished
            XDresetAllMovedSelected();
            frames['centerview'].document.location=XDCenterView();
    }

function XDGetButtonFrameHeight(oDocument)
{
        oDocument.open("text/html");
        oDocument.write(XD_goButtonFrameHeight);
        oDocument.close;
}

function XDSetButtonFrameHeight(height)
{
        XD_gnButtonFrameHeight=height;
}

/*****************************************************************************
** XDRefreshBanner: Refresh the banner with a new advertisment.
*****************************************************************************/

function XDRefreshBanner()
        {
        if (XDBannerOn())
                {
                frames['banner'].document.location = '/cgi-bin/ads.cgi';
                // WIP: parent 3 twice removed (from the above line)
                }
        }

/*****************************************************************************
** XDBannerOn: Return true if we should display the banner.
*****************************************************************************/

function XDBannerOn()
        {
        if (XD_gsPartner == 'xdrv')
                {
                return true;
                }
        else
                {
                return false;
                }
        }
```


3NSDOCID: <WO 01333B1A1 | >

```
function XDTellAFriend()
    {
        var sUrl = '/cgi-
bin/tell_a_friend.cgi?numFriends='+XD_gnNumFriendsToTell;
        frames['centerview'].document.location=sUrl;
    }

function XDAddSpace()
    {
        var sUrl = '/cgi-bin/addspace.cgi?action=intro';
        frames['centerview'].document.location=sUrl;
    }

function XDDownloadClient()
{
        var sUrl = '/cgi-bin/download_client.cgi';
        frames['centerview'].document.location=sUrl;
}
```

//uploadStatus.js

```
<!--

function openUpload(form_check, url, name, f) {

   if (! form_check) {
      return false;
   }

   var form_length = f.length;
   var cnt = 0;

   for(var i = 0; i < f.length; i++) {
      var e = f.elements[i];

      if ( (e.type == "file") && (e.value.length > 0) )  {
         cnt++;
      }
   }

   var amp_nof = "&nof=";
   url += amp_nof + cnt;

   msgWindow =
window.open(url,name,'width=350,height=190,toolbar=no,resize=no,scrollbars=no
');

   return true;
}

function createRandomID () {
   substr_rand_num = new String(Math.random());

   return substr_rand_num.substring(2,14);
}

//-->
```

//utils.js

```
/*****************************************************************************
* XDFormSetThingName: Set the name for the thing in the passed form.
*****************************************************************************/

function XDFormSetThingName(sFormName)
      {
      sFormName.sThingName.value = XDSelectedList();
      }

function XDFormSetBufferAction(sFormName,sType)
      {
      sFormName.type.value = sType;
      }

function XDFormSetFolderCurrent(sFormName)
      {
      sFormName.sFolderCurrent.value = XDSelectedFolder();
      }

function XDFormSetSelectedFiles (sFormName)
      {
      sFormName.sFile.value = XDSelectedList();
      }

function XDFormSetFolderNew(sFormName,sFolderNameNew)
      {
      sFormName.sFolderNew.value = sFolderNameNew;
      }

/*****************************************************************************
* XDFormSetThingOld: Set the old name attribute for the rename CGI.
*****************************************************************************/

function XDFormSetThingOld(sFormName,sThingName)
      {
      sFormName.sThingNameOld.value = sThingName;
      }

/*****************************************************************************
* XDFormSetThingNew: Set the new name attribute for the rename CGI.
*****************************************************************************/

function XDFormSetThingNew(sFormName,sThingName)
      {
      sFormName.sThingNameNew.value = sThingName;
      }

function XDFormSetGeneric(sFormName)
      {
      XDFormSetFolderCurrent(sFormName);
      }

/*****************************************************************************
* XDPopupShow: Show a popup browser
*****************************************************************************/

function XDPopupShow(
      sURL, //*** (I) The URL to open in the popup window
      nHeight, //*** (I) The height of the popup
```


BNSDOCID: <WO 0133381A1 | >

```
        nWidth) //*** (I) The width of the popup
        {
        var w = window.open(sURL,"viewer","location=no,toolbar=no,menubar=no,"+
              "status=no,resizable=yes,scrolling=yes,scrollbars=no,"+
              "width="+nWidth+",height="+nHeight);

        //*** make sure the opener knows who the parent is
        if (w.opener == null) w.opener = self;

        //*** focus on the newly created window
        w.focus();
        }

 function XDSelectedList()
     {
     return XD_gsSelectedList;
     }

 function XDBackgroundColor()
     {
     return XD_gsExplorerBackgroundColor;
     }

 function XDBackgroundImage()
     {
     return XD_gsBackgroundImage;
     }

 function XDSelectedFolder()
     {
     return
XD_gsSelectedFolderList.substring(0,XD_gsSelectedFolderList.length-1);
     }

/*****************************************************************************
* XDCleanupPath: Cleanup the passed path by removing the "/X:drive/" prefix
* and the + postfix.
*****************************************************************************/
 function XDPathCleanup(sPath)
     {
     var sCopy = sPath;
     sCopy = sCopy.substring(9,sCopy.length)
             //sCopy = sCopy.substring(0,sCopy.length-1);
             return sCopy;
     }

 function XDMultiSelect (sValue)
     {
     if (sValue != 'null' && sValue != "")
         {
         m_sMultiSelect = sValue;
         }
     else
         {
         return m_sMultiSelect;
         }
     }

function HTMLNavigation ()
     {
     var sHTML = HTMLStart()
                 +'<table width="100%" border="0" cellspacing="0"
cellpadding="0">'
```


3NSDOCID: <WO 013338141 >

```
                +'<tr align="left" valign="top" bgcolor="#5EB114">'
                +'<td><img src="/images/main/logo_top.gif" width="153"
height="28"></td>'
                +'</tr><tr>'
                +'<td><img src="/images/main/logo_center.gif" width="171"
height="97" alt="X:drive"></td>'
                +'</tr><tr>'
                +'<td><img src="/images/main/race_logo_bottom.gif"
width="171" height="35"></td>'
                +'</tr></table>'
                +'<a target="toolbar" href="http://www.mit.edu">MIT</a>'
                +'</BODY>\n</HTML>';
    return sHTML;
    }

function HTMLStart ()
    {
    return "<HTML>\n"
    +'<body bgcolor="#6961AB" topmargin="0" leftmargin="0" marginheight="0"
marginwidth="0" text="#FFFFFF" link="#FFFFFF" {onload}>'
    +"\n";
    }

function HTMLEnd ()
    {
    return "\n</BODY>\n</HTML>\n";
    }

function RedrawToolBar()
    {
    var sWindow = 'window.toolbar';
    sWindow.document.write(HTMLStart()+'test'+HTMLEnd());
    }

function XDEscapeCharacters (str)
{
    var A = new Array();

    A = str.split("+");
    str = A.join("%2B");

   A = str.split(" ");
    str = A.join("+");

    A = str.split("%");
    str = A.join("%25");

    A = str.split("&");
    str = A.join("%26");

     return str;
}
```


BNSDOCID: <WO 0133381A1 >

//verify_lib.js

```
<!-- Begin Hiding from older browsers

/*********************************************
***     Javascript library of functions commonly
***     used in HTML forms.
**********************************************

 validateForm(form)
      attaches to the submit button and takes the
      form as an argument. Validates all the
      fields and will only let the form be submitted
      if all the fields validate.

 checkForm()
      attaches to nothing. Is used by the script
      internally to allow compel() to function w/o
      calling alert(), which would cause an infinite
      loop.

 requireElements(num)
      attaches to onLoad to initialize the array
      of required fields in the form.

 addRequiredElements()
      attaches to nothing. Is used internally to
      construct a array of the names of all the
      required fields in a form. For this to work
      the form needs a "requiredElements" hidden
      input tag. It should be of this format:

      <INPUT TYPE="hidden" NAME="requiredElements" VALUE=" name:email:">

      List the required field names in order that
      they appear in the form. End each name with
      a ':' and lead the whole value with a blank
      space. If this tag is not used, then
      validateRequiredElements will identify a
      missing required field by its number in liue
      of the name.

compel(textfield)
      attaches to an onBlur event on a textfield.
      This causes focus to be kept on a textfield
      until checkForm() determines that they user
      has filled it out correctly.

required(textfield, num)
      attached to an onBlur of a field is required.
      The number is it's location on the
      required_elements array. i.e.

      <INPUT TYPE="text" NAME="name" onBlur="required(this, 0)">

      This tag declairs "name" as the first
      required field in the form.

validatePhone(textfield)
      attaches to an onChage of a textfield. This
      function validates to true only if the
```


3NSDOCID: <WO 0133381A1 | >

```
     textfield is blank or contains only
     0-9, -, (, or )

validateEmail(textfield)
     attaches to an onChage of a textfield. This
     function validates to true only if the
     textfield is blank or contains an @

validateDate(textfield)
     attaches to an onChage of a textfield. This
     function validates to true only if the
     textfield is blank or contains a date in
     the format DD-MON-RRRR

validateDate_old(textfield)
       attaches to an onChage of a textfield. This
       function validates to true only if the
       textfield is blank or contains a date in
       the format DD/MM/YY

validateNum(textfield)
     attaches to an onChage of a textfield. This
     function validates to true only if the
     textfield is blank or contains a number
     between -1 and infinity

validateMoney(textfield)
     attaches to an onChage of a textfield. This
     function validates to true only if the
     textfield is blank or contains a number
     between with two decimal places (ie 2.56)

confirmDelete(textfield)
     attaches to an onClick on a submit button
     used as a delete button that you want the
     user to confirm before engaging.

reset_b()
     attaches to an onClick on a submit button.
     If you have a reset button, used confirmDelete
     or have a button that needs to override the
     validity of the form, this function should
     be attached to these buttons to allow them
      to function.

**************************************************/


  emailOK = true;
  phoneOK = true;
  dateOK = true;
  lengthOK = true;
  all_numOK = true;
  all_moneyOK = true;
  deleteOK = true;
  yearOK = true;
  required_elements = new Array();
  required_elements_names = new Array();
  blurred = "";
  in_required = false;
  submitted = false;
  var submitCount;
```

```
 function validateForm(form) {
   addRequiredElements(form);
   if (!emailOK) {
    alert(XD_gsValidateEmail);
    return false;
   } else if (!phoneOK) {
    alert(XD_gsValidatePhone);
    return false;
   } else if (!dateOK) {
    alert(XD_gsValidateDate);
      return false;
   } else if (!lengthOK) {
    alert(XD_gsValidateLength);
    return false;
   } else if (!all_numOK) {
    alert(XD_gsValidateNumber);
      return false;
   } else if (!all_moneyOK) {
    alert(XD_gsValidateMoney);
      return false;
   } else if (!yearOK) {
    alert(XD_gsValidateYear);
      return false;
   } else if (!deleteOK) {
    return false;
   } else if (!validateRequiredElements()) {
    return false;
   }
}

 function compel (textfield) {
   if (blurred == "") {
       blurred = textfield;
   }
   if (!checkForm()) {
       blurred.focus();
       blurred.select()
   }
   if (checkForm() && !in_required) {
       blurred = "";
   }
}


function checkForm() {
     if(!emailOK){
         return false;
     } else if(!phoneOK){
         return false;
       } else if(!dateOK){
         return false;
       } else if(!lengthOK){
         return false;
       } else if(!all_numOK){
         return false;
       } else if(!all_moneyOK){
         return false;
       } else if(!yearOK){
         return false;
       } else if(!deleteOK){
         return false;
    } else {
       return true;
```


SDOCID: <WO_____0133381A1_I_>

```
        }
    }


    function requireElements(num) {
        var i;
        for (i=0; i < num; i++) {
            required_elements[i] = false;
        }
    }


    function addRequiredElements(form) {
        var found = false;
        for (var n=0; n < form.length; n++) {
              if (form.elements[n].name == "requiredElements") {
                    found = true;
              }
        }
        if (found) {
            var length = form.requiredElements.value.length;
            var start_index = 0;
            var end_index = 0;
            var num = 0;
            for (var i=0; i < length; i++) {
              var theChar = form.requiredElements.value.charAt(i);
              if (theChar == ":") {
                    start_index = end_index + 1;
                    end_index = i;
                    var string =
form.requiredElements.value.substring(start_index, end_index);
                    num = required_elements_names.length;
                    required_elements_names[num] = string;

              } // end of if ":"
            } //end for loop
          } // end of found
}


//check to see if the year is a 4-digit value greater than 1900
function validateYear(textfield)
{
      yearOK = true;

      //make sure the file contains only numbers
      for (var n=0; n < textfield.value.length; n++)
      {
             var theChar = textfield.value.charAt(n);
             if ((theChar >= "0") && (theChar <= "9"))
            {
                  //do nothing, assume it's still true
            }
            else
            {
                  //contains non numeric elements
                  yearOK=false;
            }

      }

      if (!yearOK)
      {
```


RNSDOCID: <WO 0133381A1_I_>

```
            alert(XD_gsValidateContainNums);
        }

        if (textfield.value < 1900)
        {
            yearOK = false;
            alert(XD_gsValidateGreater1900);
        }

        if (textfield.value.length != 4)
        {
            yearOK = false;
            alert(XD_gsValidateFourDigits);
        }
}

// Checks for a properly formated email
function validateEmail(textfield)
{
      emailOK = true;

      if ((textfield.value == "") || (textfield.value.indexOf("@") < 0))
      {
            emailOK = false;
            alert(XD_gsValidateEmailFormat);
            return false;
      }
return true;
}


function required(textfield, num)
{
      var alert_show = false;
      in_required = true;
      if (blurred == "")
      {
         alert_show = true;
         blurred = textfield;
      }

      if(textfield.type == "select-one")
      {
            //if the first option is chosen, assume that is not a real
            //choice, simply a default
            if (textfield.selectedIndex == 0)
            {
                  if (alert_show)
                  {
                     alert(XD_gsValidateField + textfield.name +
XD_gsValidateRequired);
                  }
                  blurred.focus();
                  blurred.select();
                  required_elements[num] = false;
            }//end if selectedIndex empty
            else if (textfield.selectedIndex > 0)
            {
                  blurred = "";
                  required_elements[num] = true;
                  in_required = false;
            }//end else
```


NSDOCID: <WO_____0133381A1_I_>

```
    }//end select-one


    if (textfield.type == "text" || textfield.type == "textarea" ||
textfield.type == "password")
    {
        if(textfield.value.length==0)
        {
            if (alert_show)
            {
               alert(XD_gsValidateField + blurred.name +
XD_gsValidateRequired);
            }//end alert_show
            blurred.focus();
            blurred.select();
            required_elements[num] = false;
        } //end if length empty
        else if (textfield.value.length > 0)
        {
          blurred = "";
          required_elements[num] = true;
          in_required = false;
        }//end else
    } //end if text
}


  function validateRequiredElements() {
    var length = required_elements.length;
    for (var i = 0; i < length; i++){
      if (!required_elements[i]){
        if (required_elements_names[i] == "") {
        alert(XD_gsValidateAllRequiredField + i +
XD_gsValidateNotFilled);
        return false;
       } else {
        alert(required_elements_names[i] + XD_gsValidateNotFilled);
        return false;
       }
       } // end of false element
     } // end of array
     return true;
  }


  function validatePhone(textfield) {
    phoneOK=true;
    var digits = 0;

    //Number can only contains ten digits and proper characters
    for(var i = 0; i < textfield.value.length; i++) {
      var theChar = textfield.value.charAt(i);
      if ((theChar >= "0") && (theChar <= "9")) {
        digits++;
        continue;
      }

      if (theChar == " ") continue;
      if (theChar == "-") continue;
      if (theChar == "(") continue;
      if (theChar == ")") continue;

      //else
```

```
      phoneOK = false;
    } //end for

    phoneOK = phoneOK && (digits == 10);
    if (textfield.value == "") {
     phoneOK = true;
    }
    if (!phoneOK)  {
       alert(XD_gsValidatePhoneFormat);
    }

    return phoneOK;
  }


  //Check that the date is in the form of DD-MON-YY
  function validateDate(textfield) {
    dateOK=true;
       if ((textfield.value.charAt(0) > "3") || (textfield.value.charAt(0) <
"0")) {
            dateOK=false;
      }
       if ((textfield.value.charAt(1) > "9") || (textfield.value.charAt(0) <
"0")) {
            dateOK=false;
      }
       if ((textfield.value.charAt(7) > "9") || (textfield.value.charAt(7) <
"0")) {
            dateOK=false;
      }
       if ((textfield.value.charAt(8) > "9") || (textfield.value.charAt(8) <
"0")) {
            dateOK=false;
      }
       if ((textfield.value.charAt(9) > "9") || (textfield.value.charAt(9) <
"0")) {
            dateOK=false;
      }
       if ((textfield.value.charAt(10) > "9") || (textfield.value.charAt(10)
< "0")) {
            dateOK=false;
      }
       if (textfield.value.charAt(2) != "-") {
            dateOK=false;
      }
       if (textfield.value.charAt(6) != "-") {
            dateOK=false;
      }
       var month = textfield.value.substring(3, 6);
     month = month.toUpperCase();
       if (!(month == "JAN" || month == "FEB" ||
          month == "MAR" || month == "APR" ||
          month == "MAY" || month == "JUN" ||
          month == "JUL" || month == "AUG" ||
          month == "SEP" || month == "OCT" ||
          month == "NOV" || month == "DEC")) {
           dateOK= false;
       }
     if (textfield.value == "") {
           dateOK = true;
     }
     if (!dateOK) {
           alert(XD_gsValidateDateFormat);
```


ISDOCID: <WO_____0133381A1_I_>

```
    }
  }


   //Check that the date is in the form of DD/MM/YY
   function validateDate_old(textfield) {
     dateOK=true;
       if ((textfield.value.charAt(0) > "9") || (textfield.value.charAt(0) <
"0")) {
              dateOK=false;
       }
       if ((textfield.value.charAt(1) > "9") || (textfield.value.charAt(0) <
"0")) {
              dateOK=false;
       }
       if (textfield.value.charAt(2) != "/"){
              dateOK=false;
       }
       if ((textfield.value.charAt(3) > "3") || (textfield.value.charAt(3) <
"0")) {
              dateOK=false;
       }
       if ((textfield.value.charAt(4) > "9") || (textfield.value.charAt(4) <
"0")) {
              dateOK=false;
       }
       if (textfield.value.charAt(5) != "/"){
              dateOK=false;
      }
       if ((textfield.value.charAt(6) > "9") || (textfield.value.charAt(7) <
"0")) {
              dateOK=false;
       }
       if ((textfield.value.charAt(7) > "9") || (textfield.value.charAt(7) <
"0")) {
              dateOK=false;
       }
       if (textfield.value == "") {
              dateOK = true;
       }
       if (!dateOK) {
              alert(XD_gsValidateDateFormat);
       }
  }


// checks to see that the textfield contains only numbers
function validateNum(textfield)
{
      all_numOK = true;

      for (var i=0; i < textfield.value.length; i++)
      {
            var theChar = textfield.value.charAt(i);
            if ((theChar < "0") || (theChar > "9"))
            {
                  if (textfield.value != "-1")
                  {
                        all_numOK = false;
                        alert(XD_gsValidateContainNums);
                        break;
                  } // end of if not -
```


BNSDOCID: <WO_____0133381A1_I_>

```
            } //end if not #
        } //end for

        return all_numOK;
}

    // checks to see that the textfield contains two decimal places
    function validateMoney(textfield) {

      all_moneyOK = true;

      for (var i=0; i < textfield.value.length; i++) {
        var theChar = textfield.value.charAt(i);
        if ((theChar < "0") || (theChar > "9")) {
             if (theChar != ".") {
                  all_moneyOK = false;
                alert(XD_gsValidateMoneyFormat);
                break;
               }
        } //end if not #
      } //end for

      return all_moneyOK;
    }


function validateLength(textfield, len)
{
       lengthOK = true;

       if (textfield.value.length < len)
       {
             lengthOK = false;
             alert(textfield.name + XD_gsValidateLengthFormat + len +
XD_gsValidateChars);
       }
}

    // attache to delete buttons to confirm
    function confirmDelete(textfield) {
        deleteOK = confirm(textfield.value + ": Are you sure?");
    }

    // attache to other buttons, such as add, to allow them to submit
    // after a failed delete confirm
    function reset_b() {
       deleteOK = true;
         emailOK = true;
         phoneOK = true;
         dateOK = true;
         lengthOK = true;
         yearOK = true;
         all_numOK = true;
         deleteOK = true;
       var length = required_elements.length;
       for (var i=0; i < length; i++) {
             required_elements[i] = true;
       }
    }

    // a function to error check with
    function test() {
       alert("Testing!")
```


INSDOCID: <WO_____0133381A1_I_>

```
}

// checks to see that the textfield contains only numbers and is
//between 13 and 16 characters in length
function validateLengthandInput(textfield, minLength, maxLength, dateType)
{
      all_numOK = true;

      if ((textfield.value.length<minLength) ||
(textfield.value.length>maxLength))
      {
                all_numOK = false;

            if (minLength == maxLength)
            {
                  if (dateType == "ExpDate") {
                   alert(XD_gsValidateExpDateFormat);
                  }
                  else {
                   alert(XD_gsValidateDateFormat + maxLength +
XD_gsValidateChars);
                  }
            }
            else
            {
                  alert(XD_gsValidateCard + minLength + XD_gsValidateAnd +
maxLength + XD_gsValidateChars);
            }

            return all_numOK;
      }

      for (var i=0; i < textfield.value.length; i++)
      {
            var theChar = textfield.value.charAt(i);
            if ((theChar < "0") || (theChar > "9"))
            {
                  if (textfield.value != "-1")
                  {
                        all_numOK = false;
                        alert(XD_gsValidateContainNums);
                        break;
                  } // end of if not -
            } //end if not #
      } //end for

      return all_numOK;
}

function checkRequired(form)
{
       var complete = true;
       var length = form.elements.length;

     addRequiredElements(form);
       for (var i=0; i<length; i++)
       {
           for (var j=0; j < required_elements_names.length; j++)
           {
                 if (form.elements[i].name == required_elements_names[j])
                 {
```


3NSDOCID: <WO_____0133381A1 | >

```
                        if ((form.elements[i].type == "text") ||
                                (form.elements[i].type == "password") ||
                                (form.elements[i].type == "textarea")
                               )
                        {
                              if (form.elements[i].value == '')
                              {
                                    complete = false;
                                    break;
                              }
                        }
                        else if (form.elements[i].type == "select-one")
                        {
                              if (form.elements[i].selectedIndex == 0)
                              {
                                    complete = false;
                                    break;
                              }

                        }
                        else
                        {
                              //don't worry about radio button
                        }
                  }

            }
        }
        if (!complete)
        {
            //Temp bug fix: could not read any variable from english_text.js
(scope problem?)
            //was: alert(XD_gsValidateAllRequired)
                alert("A required field is not filled out.  Please make sure
all required fields are filled out before hitting submit.");
                return false;
        }
        else
        {

                /*
                Check if we've already submitted
                */

                if (!submitted)
                {
                   submitted = true;
                   submitCount = 0;
               //took this line out because it was breaking IE
               // and it's not used for submitting the form anyway
                   //form.submit();
                   return true;
                }

        }


        submitCount += 1;


        {
           var gender = "";
           var message = "";;
```

```
            if (form.gender.value == "1" || form.gender.value == "2")
            {
                var gender;
                if (form.gender.value == "1")
                {
                  gender = "Dude"
                }
                else
                {
                  gender = "Lady"
                }
            }

            if (submitCount == 2)
            {
                message = " Hey " + gender + " give me a second while I send
info";
            }
            if (submitCount == 3)
            {
                message = "Okay... now your just pressing too much";
            }
            if (submitCount > 1  && submitCount < 4)
            {

               alert(message);
            }

        }

        return false;
}

function CheckPassword(form)
{
        var length = form.elements.length;
      var change=1;
    //Make sure passwords match
    if (form.elements[1].value !=
        form.elements[2].value)
        {
                alert(XD_gsValidatePasswords);
                change=0;
         return false;
        }

        if (change==1)
        {
            form.submit();
        }
    return true;
}
```


BNSDOCID: <WO 0133381A1_I_>

//xparse.js

```
function _element()

    {
    this.type = "element";
    this.name = new String();
    this.attributes = new Array();
    this.contents = new Array();
    this.uid = _Xparse_count++;
    _Xparse_index[this.uid]=this;

    // Added by Martin Hald
    this.attributes.folder = 0;
    }

function _chardata()
    {
    this.type = "chardata";
    this.value = new String();
    }

function _pi()
    {
    this.type = "pi";
    this.value = new String();
    }

function _comment()
    {
    this.type = "comment";
    this.value = new String();
    }

// an internal fragment that is passed between functions
function _frag()
    {
    this.str = new String();
    this.ary = new Array();
    this.end = new String();
    }

//////////////////////////
// global vars to track element UID's for the index
var _Xparse_count = 0;
var _Xparse_index = new Array();


//////////////////////////
//// Main public function that is called to
//// parse the XML string and return a root element object

function Xparse(src)
    {
    // Hack added by Martin Hald to fix the grove[x] not an object error
    // where the grove object array indexes was shifted up by the previos
    // parsing
    _Xparse_count = 0;

    var frag = new _frag();
```


INSDOCID: <WO_____0133381A1_I_>

```
    // remove bad \r characters and the prolog
    frag.str = _prolog(src);

    // create a root element to contain the document
    var root = new _element();
    root.name= XD_gsRootPath;
    root.attributes.folder = 1;
    root.attributes.show = 1;

    // main recursive function to process the xml
    frag = _compile(frag);

    // all done, lets return the root element + index + document
    root.contents = frag.ary;
    root.index = _Xparse_index;
    _Xparse_index = new Array();

    return root;
    }

//////////////////////////


//////////////////////////
//// transforms raw text input into a multilevel array
function _compile(frag)
    {
    // keep circling and eating the str
    while (1)
        {
        // when the str is empty, return the fragment
        if (frag.str.length == 0)
            {
            return frag;
            }

        var TagStart = frag.str.indexOf("<");

        if (TagStart != 0)
            {
            // theres a chunk of characters here, store it and go on
            var thisary = frag.ary.length;
            frag.ary[thisary] = new _chardata();
            if (TagStart == -1)
                {
                frag.ary[thisary].value = _entity(frag.str);
                frag.str = "";
                }
            else
                {
                frag.ary[thisary].value =
_entity(frag.str.substring(0,TagStart));
                frag.str = frag.str.substring(TagStart,frag.str.length);
                }
            }
        else
            {
            // determine what the next section is, and process it
            if (frag.str.substring(1,2) == "?")
                {
                frag = _tag_pi(frag);
                }
            else
```


BNSDOCID: <WO 0133381A1 >

```
                {
                if (frag.str.substring(1,4) == "!--")
                    {
                    frag = _tag_comment(frag);
                    }
                else
                    {
                    if (frag.str.substring(1,9) == "![CDATA[")
                        {
                        frag = _tag_cdata(frag);
                        }
                    else
                        {
                        if (frag.str.substring(1,frag.end.length + 3) == "/"
+ frag.end + ">" || _remove_escapes(frag.str.substring(1,frag.end.length +
3)) == "/" + frag.end)
                            {
                            // found the end of the current tag, end the
recursive process and return
                            frag.str = frag.str.substring(frag.end.length +
3,frag.str.length);
                            frag.end = "";
                            return frag;
                            }
                        else
                            {
                            frag = _tag_element(frag);
                            }
                        }
                    }

            }
        }
    return "";
    }

//////////////////////


//////////////////////
//// functions to process different tags
function XDTrueSpaceIndex(frag)
    {
    var length = frag.length;
    for (var i=0; i < length; i++)
        {
        if (  (frag.charAt(i) == " ")
              &&(frag.charAt(i-1) != "\\")
           )
            {

            break;

            }
        }

    return i;
    }


function _tag_element(frag)
    {
```

```
    // initialize some temporary variables for manipulating the tag
    var close = frag.str.indexOf(">");
    var empty = (frag.str.substring(close - 1,close) == "/");
    if (empty)
        {
        close -= 1;
        }

    // split up the name and attributes
    var starttag = _normalize(frag.str.substring(1,close));
    //var nextspace = starttag.indexOf(" ");
    var nextspace = XDTrueSpaceIndex(starttag);
    var attribs = new String();
    var name = new String();
    if (nextspace != -1)
        {
        name = starttag.substring(0,nextspace);
        attribs = starttag.substring(nextspace + 1,starttag.length);
        }
    else
        {
        name = starttag;
        }

    var thisary = frag.ary.length;
    frag.ary[thisary] = new _element();
    frag.ary[thisary].name = _remove_escapes(name);

    if (attribs.length > 0)
        {
        frag.ary[thisary].attributes = _attribution(attribs);
        }

    if (!empty)
        {
        // !!!! important,
        // take the contents of the tag and parse them
        var contents = new _frag();
        contents.str = frag.str.substring(close + 1,frag.str.length);
        contents.end = name;
        contents = _compile(contents);
        frag.ary[thisary].contents = contents.ary;
        frag.str = contents.str;
        }
    else
        {
        frag.str = frag.str.substring(close + 2,frag.str.length);
        }
    return frag;
    }

function _tag_pi(frag)
    {
    var close = frag.str.indexOf("?>");
    var val = frag.str.substring(2,close);
    var thisary = frag.ary.length;
    frag.ary[thisary] = new _pi();
    frag.ary[thisary].value = val;
    frag.str = frag.str.substring(close + 2,frag.str.length);
    return frag;
    }

function _tag_comment(frag)
```


BNSDOCID: <WO_____0133381A1_I_>

```
    {
    var close = frag.str.indexOf("-->");
    var val = frag.str.substring(4,close);
    var thisary = frag.ary.length;
    frag.ary[thisary] = new _comment();
    frag.ary[thisary].value = val;
    frag.str = frag.str.substring(close + 3,frag.str.length);
    return frag;
    }

function _tag_cdata(frag)
    {
    var close = frag.str.indexOf("]]>");
    var val = frag.str.substring(9,close);
    var thisary = frag.ary.length;
    frag.ary[thisary] = new _chardata();
    frag.ary[thisary].value = val;
    frag.str = frag.str.substring(close + 3,frag.str.length);
    return frag;
    }

//////////////////////////


//////////////////
//// util for element attribute parsing
//// returns an array of all of the keys = values
function _attribution(str)
    {
    var all = new Array();
    while (1)
        {
        var eq = str.indexOf("=");
        if (str.length == 0 || eq == -1)
            {
            return all;
            }

        var id1 = str.indexOf("\'");
        var id2 = str.indexOf("\"");
        var ids = new Number();
        var id = new String();
        if ((id1 < id2 && id1 != -1) || id2 == -1)
            {
            ids = id1;
            id = "\'";
            }
        if ((id2 < id1 || id1 == -1) && id2 != -1)
            {
            ids = id2;
            id = "\"";
            }
        var nextid = str.indexOf(id,ids + 1);
        var val = str.substring(ids + 1,nextid);

        var name = xstrip(str.substring(0,eq));
        var entity = new String();
        entity = _entity(val);
        all[name] = entity;
        str = str.substring(nextid + 1,str.length);
        }
    return all;
    }
```


NSDOCID: <WO_____0133381A1_I_>

```
//////////////////////


//////////////////////
//// util to remove \r characters from input string
//// and return xml string without a prolog
function _prolog(str)
    {
    var A = new Array();

    A = str.split("\r\n");
    str = A.join("\n");
    A = str.split("\r");
    str = A.join("\n");

    var start = str.indexOf("<");
    if (str.substring(start,start + 3) == "<?x" || str.substring(start,start
+ 3) == "<?X" )
        {
        var close = str.indexOf("?>");
        str = str.substring(close + 2,str.length);
        }
    var start = str.indexOf("<!DOCTYPE");
    if (start != -1)
        {
        var close = str.indexOf(">",start) + 1;
        var dp = str.indexOf("[",start);
        if (dp < close && dp != -1)
            {
            close = str.indexOf("]>",start) + 2;
            }
        str = str.substring(close,str.length);
        }
    return str;
    }
//////////////////


function _remove_escapes (str)
      {
      var A = new Array();
      A = str.split("\\");
      str = A.join("");
      return str;
      }

//////////////////////
//// util to remove white characters from input string
function xstrip(str)
    {
    A = str.split(" ");
    str = A.join("");
    A = str.split("\n");
    str = A.join("");
    A = str.split("\t");
    str = A.join("");

    //A = str.split(" ");
    //str = A.join(" ");
    //A = str.split("\n");
    //str = A.join("");
    //A = str.split(" ");
    //str = A.join("");
```

```
    //A = str.split("\t");
    //str = A.join("");

    return str;
    }
//////////////////


//////////////////////
//// util to replace white characters in input string
function _normalize(str)
    {
    var A = new Array();

    A = str.split("\n");
    str = A.join(" ");
    A = str.split("\t");
    str = A.join(" ");

    return str;
    }
//////////////////


//////////////////////
//// util to replace internal entities in input string
function _entity(str)
    {
    var A = new Array();

    //A = str.split("&lt;");
    //str = A.join("<");
    //A = str.split("&gt;");
    //str = A.join(">");
    //A = str.split("&quot;");
    //str = A.join("\"");
    //A = str.split("&apos;");
    //str = A.join("\'");

    //A = str.split("&amp;");
    //str = A.join("&");

    //Get rid of any escapes
    A = str.split("\\");
    str = A.join("");

    return str;
    }
//////////////////
```


NSDOCID: <WO 0133381A1 I >

CLAIMS

What is claimed is:

1. A shared computer network storage system, comprising:

a first database containing file data;

a second database containing information (metadata) about said file data of said first database;

a server, said server executing file commands on said first file database, said server contemporaneously updating said second metadatabase upon executing said file commands; and

a client application, said client application communicating with said server, said client application invoking file commands upon said server, said server executing said file commands and updating information regarding said first file and second metadata databases displayed by said client application; whereby

said client application controls files in said first file database and information regarding status of said first database files is more readily available by reference to said second metadatabase.

2. The shared computer network storage system of claim 1, wherein said first file database is distributed over at least two physical storage devices.

3. The shared computer network storage system of claim 1, wherein said second metadatabase is distributed over at least two physical storage devices.

4. The shared computer network storage system of claim 1, wherein said client application communicates with said server via a proxy.

5. The shared computer network storage system of claim 1, wherein said server comprises a non-routable network.

6. The shared computer network storage system of claim 1, wherein said server comprises a transaction processor.

7. The shared computer network storage system of claim 6, wherein said transaction processor guarantees access to and transactions on said first and second databases.

8. The shared computer network storage system of claim 1, wherein said server comprises an enterprise java bean cluster (EJBC).

9. The shared computer network storage system of claim 8, wherein said enterprise java bean cluster (EJBC) handles business logic and resource access methods a well as memory caching for common resources.

10. The shared computer network storage system of claim 1, wherein said server further comprises an application network.

BNSDOCID: <WO 0133381A1 >

11. The shared computer network storage system of claim 10, wherein said application network further comprises a java application cluster.

12. The shared computer network storage system of claim 10, wherein said application network handles display functions and resource requests.

13. The shared computer network storage system of claim 1, wherein said server further comprises a web server.

14. The shared computer network storage system of claim 13, wherein said web server handles all requests for static content and proxies requests for dynamic content.

15. The shared computer network storage system of claim 1, wherein said server further comprises a load balancer, said load balancer proxying requests to a sub-server having the highest degree of availability or functionality.

16. The shared computer network storage system of claim 1 wherein said server further comprises a DNS redirector, said DNS redirector proxying requests to a resource having a highest degree of functionality.

17. The shared computer network storage system of claim 1 wherein said server further comprises:

a transaction processor, said transaction processor on a non-routable network, said transaction processor guarantees access to and transactions on said first and second databases;

an enterprise java bean cluster (EJBC) on a non-routable network, said enterprise java bean cluster (EJBC) coupled to said transaction processor and handling business logic and resource access methods a well as memory caching for common resources;

an application network on a non-routable network, said application network coupled to said enterprise java bean cluster, said application network including a java application cluster and handling display functions and resource requests;

a web server, said web server coupled to said application network and handling all requests for static content and proxies requests for dynamic content;

a load balancer, said load balancer coupled to said web server and proxying requests to a sub-server having the highest degree of availability or functionality; and

a DNS redirector, said DNS redirector coupled to said load balancer and proxying requests to a resource having a highest degree of functionality.

18. The shared computer network storage system of claim 1, wherein said client application is web-based.

19. The shared computer network storage system of claim 1, wherein said client application interacts with an operating system running upon a computer upon which said client application is also running, said client application adopting and implementing a visual display format similar to said operating system.

20. A shared computer network storage system, comprising:

a first database containing file data, said first database distributed over at least two physical storage devices;

a second database containing information (metadata) about said file data of said first database, said second database distributed over at least two physical storage devices;

a server, said server executing file commands on said first file database, said server contemporaneously updating said second metadatabase upon executing said file commands, said server including:

a transaction processor, said transaction processor on a non-routable network, said transaction processor guarantees access to and transactions on said first and second databases;

an enterprise java bean cluster (EJBC) on a non-routable network, said enterprise java bean cluster (EJBC) coupled to said transaction processor and handling business logic and resource access methods a well as memory caching for common resources;

an application network on a non-routable network, said application network coupled to said enterprise java bean cluster, said application network including a java application cluster and handling display functions and resource requests;

a web server, said web server coupled to said application network and handling all requests for static content and proxies requests for dynamic content;

a load balancer, said load balancer coupled to said web server and proxying requests to a sub-server having the highest degree of availability or functionality; and

a DNS redirector, said DNS redirector coupled to said load balancer and proxying requests to a resource having a highest degree of functionality; and

a client application, said client application communicating with said server via a proxy, said client application invoking file commands upon said server, said server executing said file commands and updating information regarding said first file and second metadata databases displayed by said client application; whereby

said client application controls files in said first file database and information regarding status of said first database files is more readily available by reference to said second metadatabase.

21. The shared computer network storage system of claim 20, wherein said client application is web-based.

22. The shared computer network storage system of claim 20, wherein said client application interacts with an operating system running upon a computer upon which said client application is also running, said client application adopting and implementing a visual display format similar to said operating system.

23. A method for providing private file space and information transfer over a public computer network, the steps comprising:

providing a publicly-available private file space system coupled to the public computer network;

providing a client program in communication with the public computer network;

sending a request from said client program to said publicly-available private file space system

BNSDOCID: <WO 0133381A1 >

("private system");

evaluating said request;

authenticating said request;

satisfying said request; and

returning a success indicator to said client program indicating the success or failure of said request; whereby

said client program may create and control files held by said private system.

24. The method for providing private file space and information transfer over a public computer network as set forth in claim 23, wherein the step of evaluating said request further comprises evaluating said request for static content and returning an appropriate response if said request is for static content.

25. The method for providing private file space and information transfer over a public computer network as set forth in claim 24, the steps further comprising:

providing an application network within said private system;

proxying said request to said application network; and

parsing a header of said request.

26. The method for providing private file space and information transfer over a public computer network as set forth in claim 23, wherein said step of authenticating said request further comprises:

authenticating a user using said client program; and

authenticating said request made by said client program to ensure that it conforms with an account associated with said user.

27. The method for providing private file space and information transfer over a public computer network as set forth in claim 23, further comprising:

parsing multipart form data associated with said request;

determining said request's type; and

submitting said request.

28. A method for providing private file space and information transfer over a public computer network, the steps comprising:

providing a publicly-available private file space system coupled to the public computer network;

providing a client program in communication with the public computer network;

sending a request from said client program to said publicly-available private file space system ("private system");

evaluating said request for static content and returning an appropriate response if said request is for static content;

providing an application network within said private system;

proxying said request to said application network; and

parsing a header of said request

authenticating said request by authenticating a user using said client program and authenticating said request made by said client program to ensure that it conforms with an account associated with said user;

parsing multipart form data associated with said request;

determining said request's type;

submitting said request;

satisfying said request; and

returning a success indicator to said client program indicating the success or failure of said request; whereby

said client program may create and control files held by said private system.

29. A data structure for effecting file operations on a private file space and information transfer system over a public computer network, comprising:

a user data object;

a process request object; and

a recovery object;

said user information object, said process request object, and said recovery object associated within a file action object.

30. The data structure for effecting file operations on a private file space and information transfer system over a public computer network as set forth in claim 29, wherein said user data object further comprises:

a user information object; and

a security object.

31. The data structure for effecting file operations on a private file space and information transfer system over a public computer network as set forth in claim 29, wherein said process request object further comprises:

a file operation object comprising said recovery object and a database IO object, a file IO object, and an administration object.

32. The data structure for effecting file operations on a private file space and information transfer system over a public computer network as set forth in claim 29, wherein said recovery object further comprises:

a recovery IO object;

a mount status object;

a recovery administration object; and

a recovery process object.

33. A data structure for effecting file operations on a private file space and information transfer system over a public computer network, comprising:

a user data object, said user data object having a user information object; and a security object;

a process request object, said process request object including a file operation object, a database IO object, a file IO object, and an administration object; and

BNSDOCID: <WO 0133381A1 I >

a recovery object, said recovery object incorporated in said file operation object, said recovery object including a recovery IO object, a mount status object, a recovery administration object, and a recovery process object;

said user information object, said process request object, and said recovery object associated within a file action object; whereby

file operations may be facilitated by the data structure including recovery from resource failure.

34. A shared file storage resource for a computer network, comprising:

an allocatable file storage resource;

a server, said server coupled to said storage resource, said server:

allocating individual user file space for a plurality of users on said storage resource;

receiving files for storage on said storage resource;

transmitting files stored on said storage resource;

generating control-protocol codes for transmitting said files;

receiving file commands for controlling files on said storage resource; and

transmitting display codes indicating file status on said storage resource, said display codes representing said storage resource as a network drive;

a first network connection, said first network connection coupling said server to the computer network;

a workstation, said workstation:

receiving files for storage on said storage resource;

transmitting files stored on said storage resource;

receiving file commands for controlling files on said storage resource; and

transmitting display codes indicating file status on said storage resource, said display codes representing said storage resource as a network drive; whereby

a user may store, retrieve, and control files in a unique and secure file storage area on said allocatable storage resource available throughout the computer network and detached from said workstation.

35. The shared file storage resource for a computer network as set forth in claim 34, wherein said display codes further comprise:

a browser-interpretable object, such as a JavaScript object, said object displaying file status on said storage resource as a web page.

36. The shared file storage resource for a computer network as set forth in claim 34, further comprising:

a standalone program running on said workstation, said standalone program interpreting said display codes and providing a seamless interface to said user, said seamless interface presenting said storage resource as a local or network resource to said user and allowing said user to manipulate files on said storage resource in the same manner as local storage resources such as a floppy disk drive or a local hard drive.

INSDOCID: <WO 01333381A1 I >

37. The shared file storage resource for a computer network as set forth in claim 34, wherein said computer network, further comprises:

the Internet.

38. A method for transferring data from a first network resource to a second network resource at the direction of a user, the steps comprising:

submitting a first file location indicating data to be transferred to the second network resource;

the second network resource requesting said data at said first file location from the first network resource;

the first network resource transmitting said data to the second network resource; and

the second network resource notifying the user of successful transfer upon successful reception of said data; whereby

the user may use the first and second network resources to obtain and control said data.

39. The method for transferring data as set forth in claim 38, wherein the second network resource comprises a subscriber-based system of network-available storage space.

40. The method for transferring data as set forth in claim 38, wherein the first and second network resources are coupled to the Internet.

41. The method for transferring data as set forth in claim 38, the steps further comprising:

displaying to the user a status of transmission of said data from said first network resource to said second network resource.

42. The method for transferring data as set forth in claim 38, the steps further comprising:

verifying the user as a subscriber to or member of the second network resource.

43. A method for transferring data from a first network resource to a second network resource at the direction of a user, the steps comprising:

submitting a first file location indicating data to be transferred to the second network resource, the second network resource being a subscriber-based system of network-available data storage space;

verifying the user as a subscriber to or member of the second network resource;

the second network resource requesting said data at said first file location from the first network resource;

the first network resource transmitting said data to the second network resource via Internet;

displaying to the user a status of transmission of said data from said first network resource to said second network resource; and

the second network resource notifying the user of successful transfer upon successful reception of said data; whereby

the user may use the first and second network resources to obtain and control said data.

BNSDOCID: <WO 0133381A1 I >

44. A client-server system for a network-based data storage and manipulation system, comprising:

a client system, said client system having a file access service and a file manipulation service;

a server, said server providing network-based data storage resources and responding to requests transmitted by said client system, said server effecting said requests;

said server determining if a client request is one for metadata regarding data stored upon said server;

said server providing said metadata if said client request is for metadata and transmitting said metadata to said file manipulation service; and

said server performing a file action if said client request is not for metadata, said server updating said metadata and transmitting said metadata to said file manipulation service; whereby

said server operates, and said client system presents, operations on said server in a manner similar to operations local to said client system.

45. The client-server system for a network-based data storage and manipulation system as set forth in claim 44, wherein said file access service further comprises:

a request processing layer for processing requests; and

a first network I/O layer for transmitting said requests to said server.

46. The client-server system for a network-based data storage and manipulation system as set forth in claim 44, wherein said file manipulation service further comprises:

a parser, said parser parsing said metadata from said server;

a data structure, said data structure receiving and preserving parsed data from said parser; and

a data display layer, said data display layer operating upon and displaying said parsed data; whereby

metadata may be displayed to inform about data stored upon said server.

47. The client-server system for a network-based data storage and manipulation system as set forth in claim 46, wherein said parser is an XML parser.

48. The client-server system for a network-based data storage and manipulation system as set forth in claim 44, wherein said server further comprises:

a second network I/O layer, said second network I/O layer engaged when said requests are not for metadata, said second network I/O layer transmitting requests for file action; and

a resource access layer, said resource access layer receiving transmissions from said second network I/O layer and effecting said requests, said resource access layer engaged when said requests are for metadata, said resource access layer obtaining and transmitting said metadata; and

a metadata compiler, said metadata compiler receiving said metadata from said resource access layer, compiling said metadata, and transmitting said compiled metadata to said client system.

49. The client-server system for a network-based data storage and manipulation system as set forth in claim 48, wherein said metadata compiler is an XML generator.

NSDOCID: <WO_____0133381A1_I_>

50. A client-server system for a network-based data storage and manipulation system, comprising:

a client system, said client system having a file access service and a file manipulation service;

a server, said server providing network-based data storage resources, said server creating and maintaining metadata regarding stored data, said server responding to requests transmitted by said client system, said server effecting said requests;

said server determining if a client request is one for metadata;

said server providing said metadata if said client request is for metadata and transmitting said metadata to said file manipulation service;

said server performing a file action if said client request is not for metadata, said server updating said metadata and transmitting said metadata to said file manipulation service;

said file access service having a request processing layer for processing requests and a first network I/O layer for transmitting said requests to said server;

said file manipulation service having an XML parser, said XML parser parsing said metadata from said server, said file manipulation service having a data structure, said data structure receiving and preserving parsed data from said parser, and said file manipulation service having a data display layer, said data display layer operating upon and displaying said parsed data so that metadata may be displayed to inform about data stored upon said server; and

said server having a second network I/O layer, said second network I/O layer engaged when said requests are not for metadata, said second network I/O layer transmitting requests for file action, said server having a resource access layer, said resource access layer receiving transmissions from said second network I/O layer and effecting said requests, said resource access layer engaged when said requests are for metadata, said resource access layer obtaining and transmitting said metadata, and said server having a metadata compiler in the form of an XML generator, said metadata compiler receiving said metadata from said resource access layer, compiling said metadata, and transmitting said compiled metadata to said client system; whereby

said server operates as and said client system presents operations on said server in a manner similar to operations local to said client system.

BNSDOCID: <WO 0133381A1 >

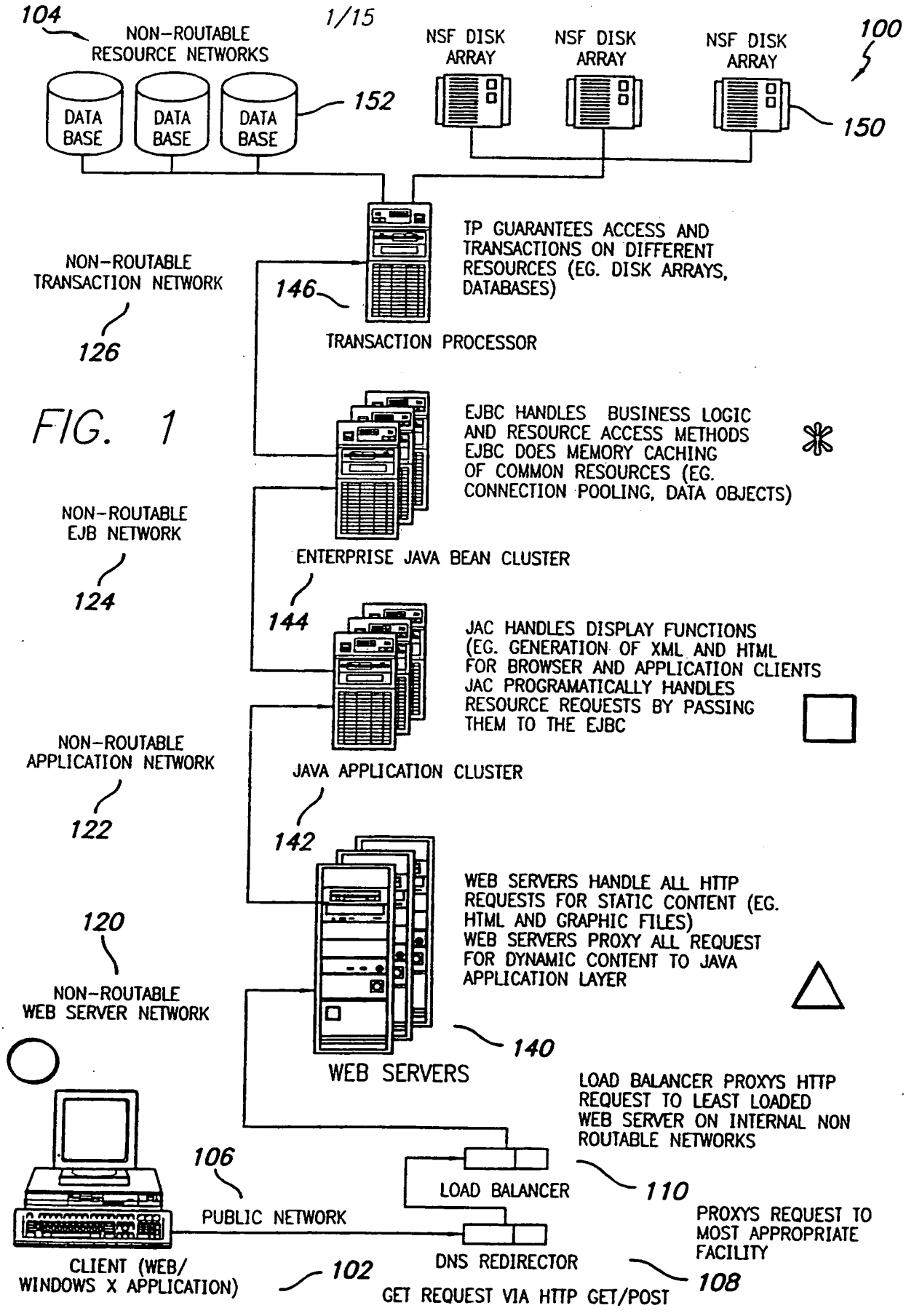


FIG. 1

NSDOCID: <WO_____0133381A1_IA>

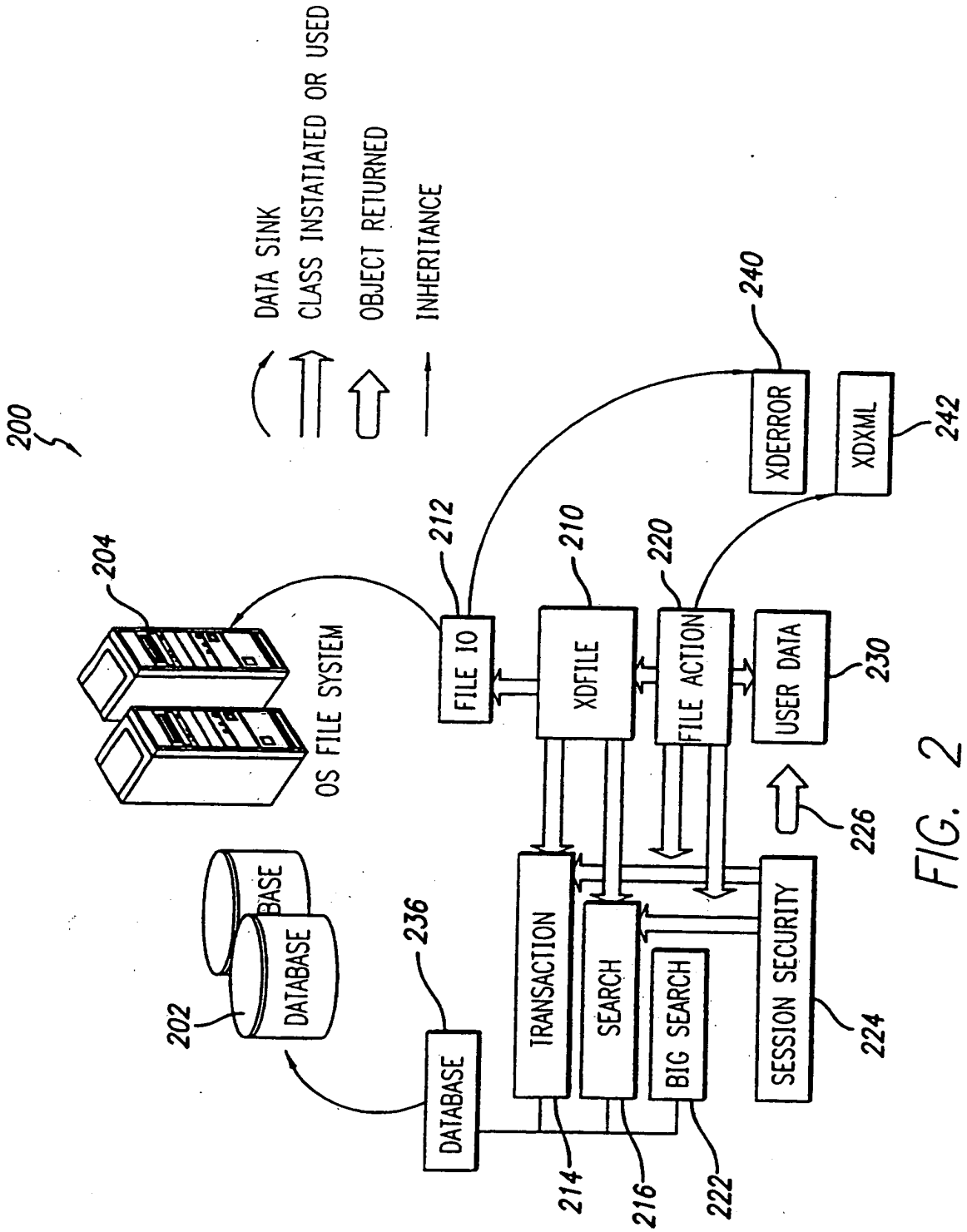

200
DATA SINK
CLASS INSTATIATED OR USED
OBJECT RETURNED
INHERITANCE
204
OS FILE SYSTEM
212
FILE IO
210
XDFILE
220
FILE ACTION
240
XDERROR
242
XDXML
USER DATA
230
226
BASE
DATABASE
202
236
DATABASE
TRANSACTION
SEARCH
BIG SEARCH
SESSION SECURITY
224
214
216
222

FIG. 2

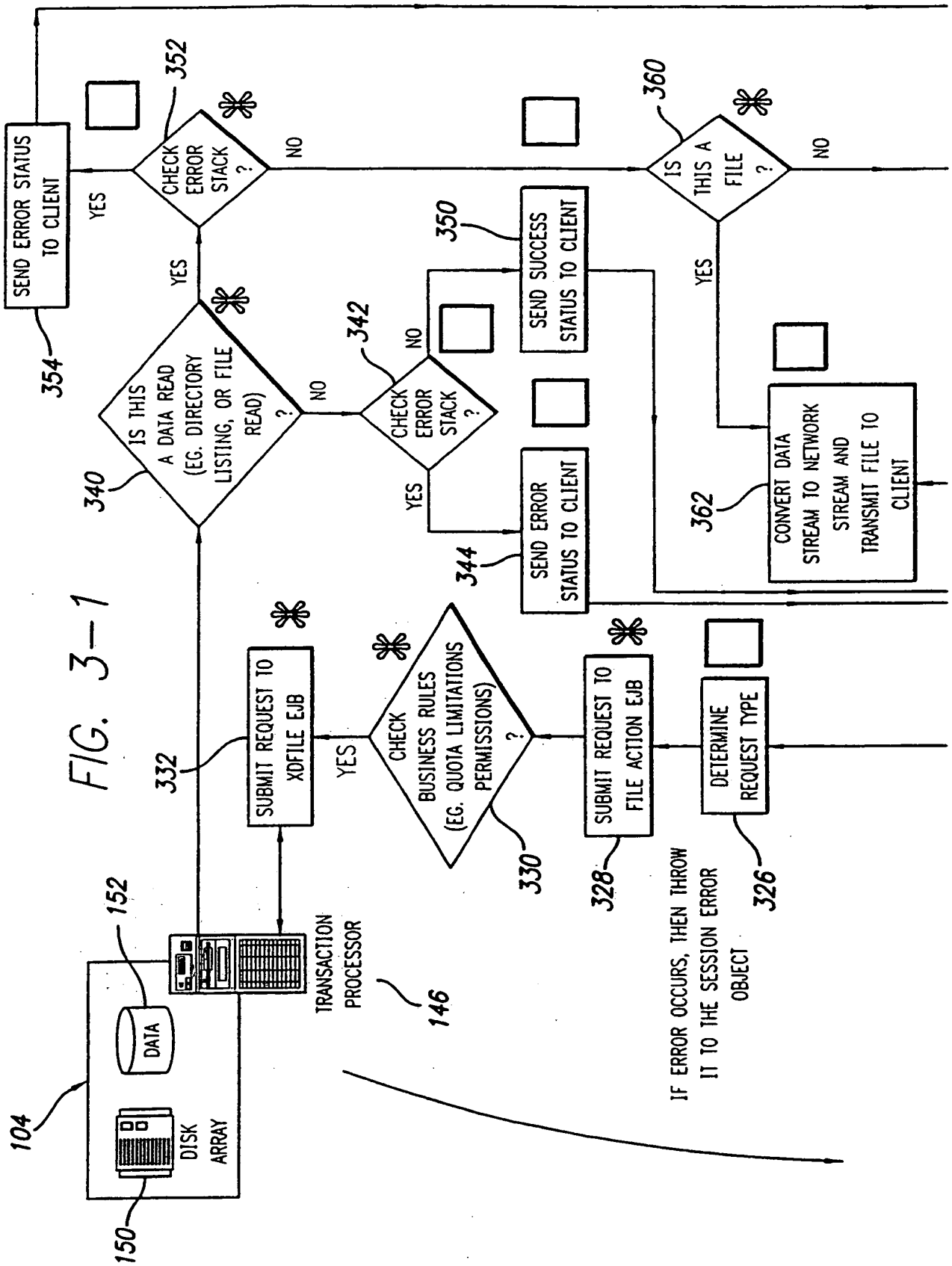

SEND ERROR STATUS TO CLIENT
354
CHECK ERROR STACK ?
352
YES
NO
IS THIS A DATA READ (EG. DIRECTORY LISTING, OR FILE READ) ?
340
YES
NO
CHECK ERROR STACK ?
342
YES
NO
SEND ERROR STATUS TO CLIENT
344
SEND SUCCESS STATUS TO CLIENT
350
IS THIS A FILE ?
360
YES
NO
CONVERT DATA STREAM TO NETWORK STREAM AND TRANSMIT FILE TO CLIENT
362
SUBMIT REQUEST TO XDFILE EJB
332
YES
CHECK BUSINESS RULES (EG. QUOTA LIMITATIONS PERMISSIONS) ?
330
SUBMIT REQUEST TO FILE ACTION EJB
328
DETERMINE REQUEST TYPE
326
IF ERROR OCCURS, THEN THROW IT TO THE SESSION ERROR OBJECT
TRANSACTION PROCESSOR
146
152
DATA
104
DISK ARRAY
150

FIG. 3-1

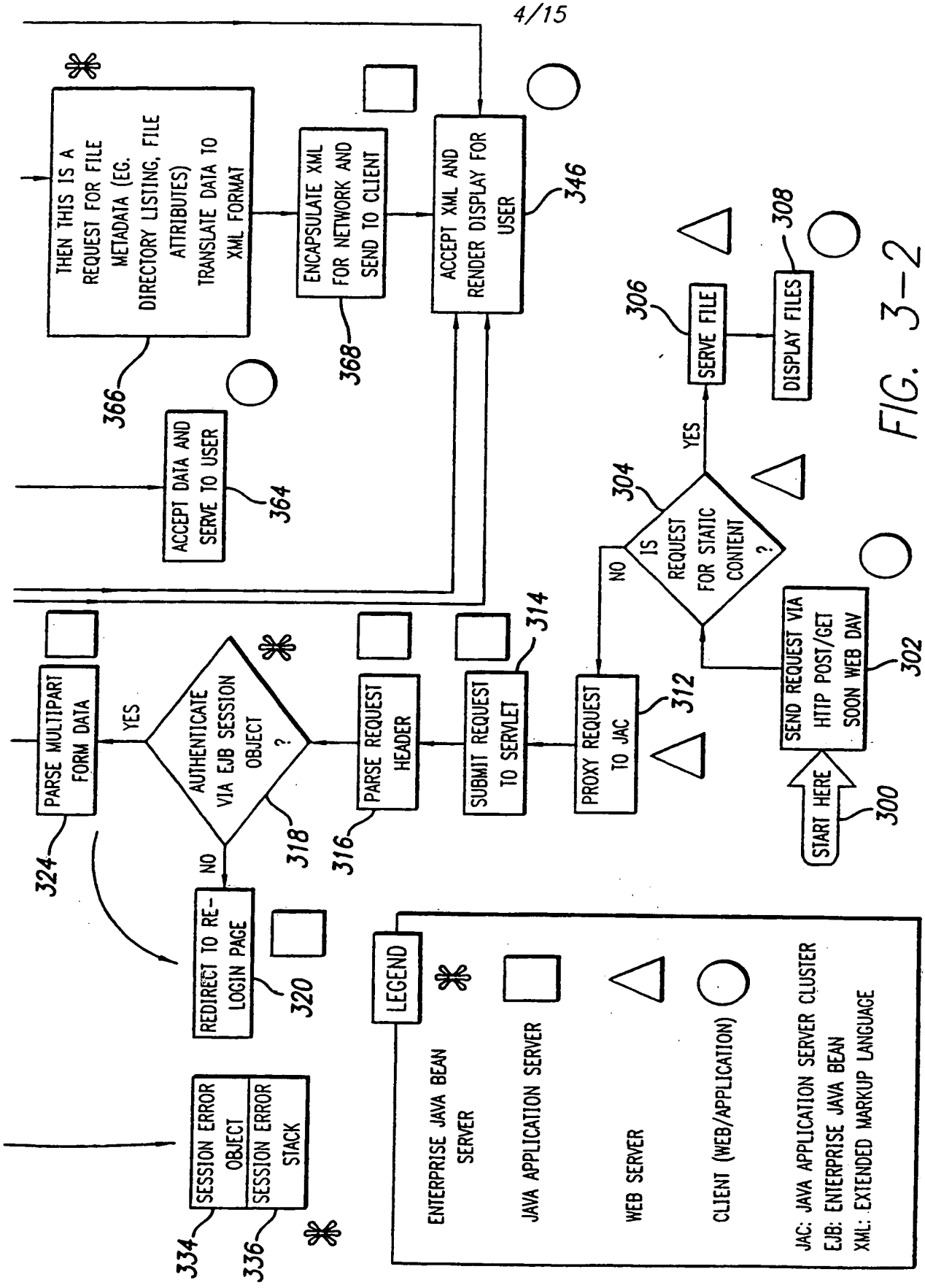
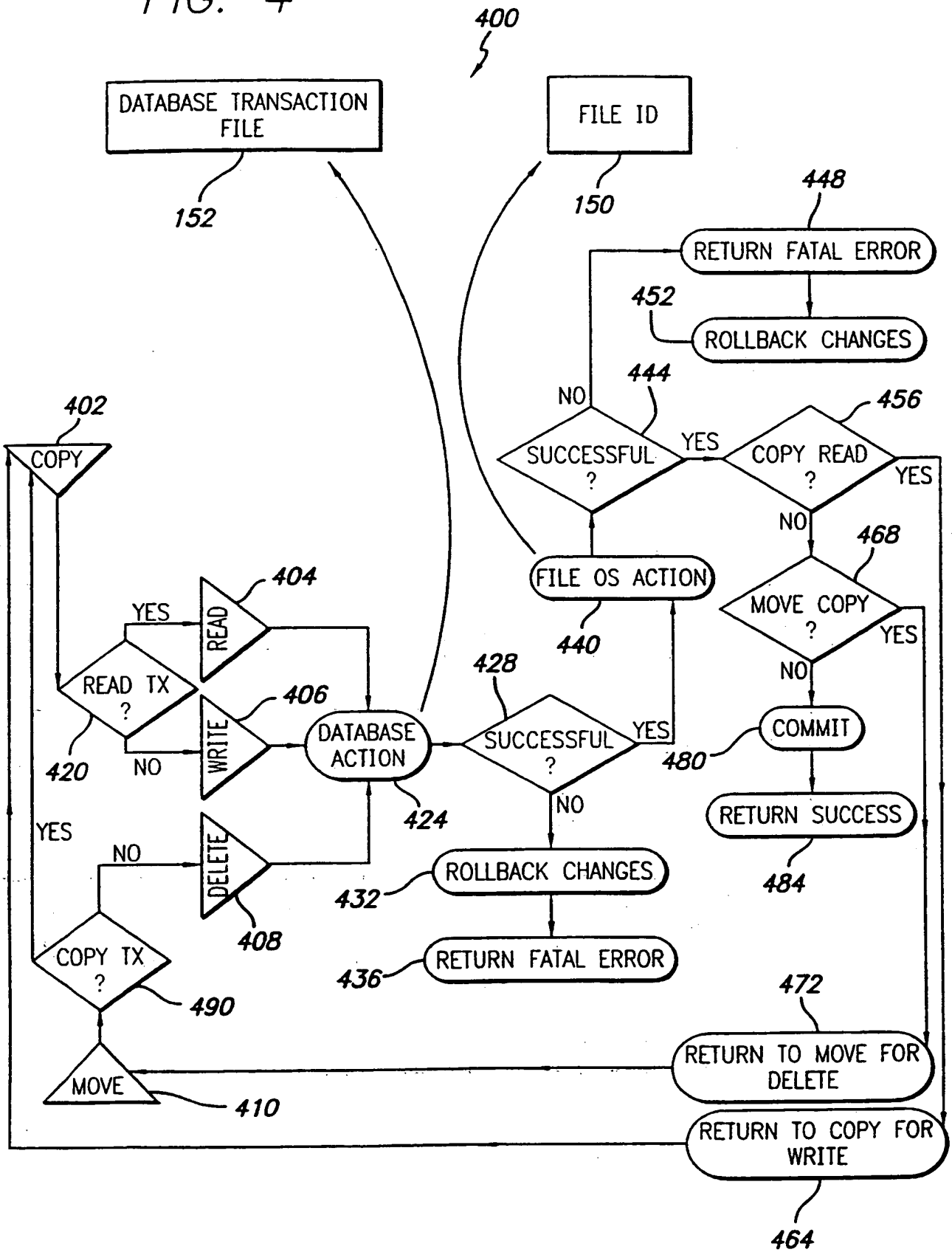

START HERE
300
SEND REQUEST VIA HTTP POST/GET SOON WEB DAV
302
PROXY REQUEST TO JAC
312
SUBMIT REQUEST TO SERVLET
314
PARSE REQUEST HEADER
316
AUTHENTICATE VIA EJB SESSION OBJECT ?
318
YES
NO
REDIRECT TO RE-LOGIN PAGE
320
PARSE MULTIPART FORM DATA
324
IS REQUEST FOR STATIC CONTENT ?
304
YES
NO
SERVE FILE
306
DISPLAY FILES
308
ACCEPT XML AND RENDER DISPLAY FOR USER
346
ENCAPSULATE XML FOR NETWORK AND SEND TO CLIENT
368
THEN THIS IS A REQUEST FOR FILE METADATA (EG. DIRECTORY LISTING, FILE ATTRIBUTES) TRANSLATE DATA TO XML FORMAT
366
ACCEPT DATA AND SERVE TO USER
364
SESSION ERROR OBJECT
SESSION ERROR STACK
334
336
LEGEND
ENTERPRISE JAVA BEAN SERVER
JAVA APPLICATION SERVER
WEB SERVER
CLIENT (WEB/APPLICATION)
JAC: JAVA APPLICATION SERVER CLUSTER
EJB: ENTERPRISE JAVA BEAN
XML: EXTENDED MARKUP LANGUAGE

FIG. 3-2

FIG. 4


400
DATABASE TRANSACTION FILE
152
FILE ID
150
448
RETURN FATAL ERROR
452
ROLLBACK CHANGES
444
NO
SUCCESSFUL ?
YES
456
COPY READ ?
YES
NO
468
MOVE COPY ?
YES
NO
402
COPY
404
READ
YES
READ TX ?
420
NO
406
WRITE
DATABASE ACTION
424
428
SUCCESSFUL ?
YES
NO
FILE OS ACTION
440
480
COMMIT
RETURN SUCCESS
484
YES
NO
DELETE
408
ROLLBACK CHANGES
432
RETURN FATAL ERROR
436
COPY TX ?
490
MOVE
410
472
RETURN TO MOVE FOR DELETE
RETURN TO COPY FOR WRITE
464

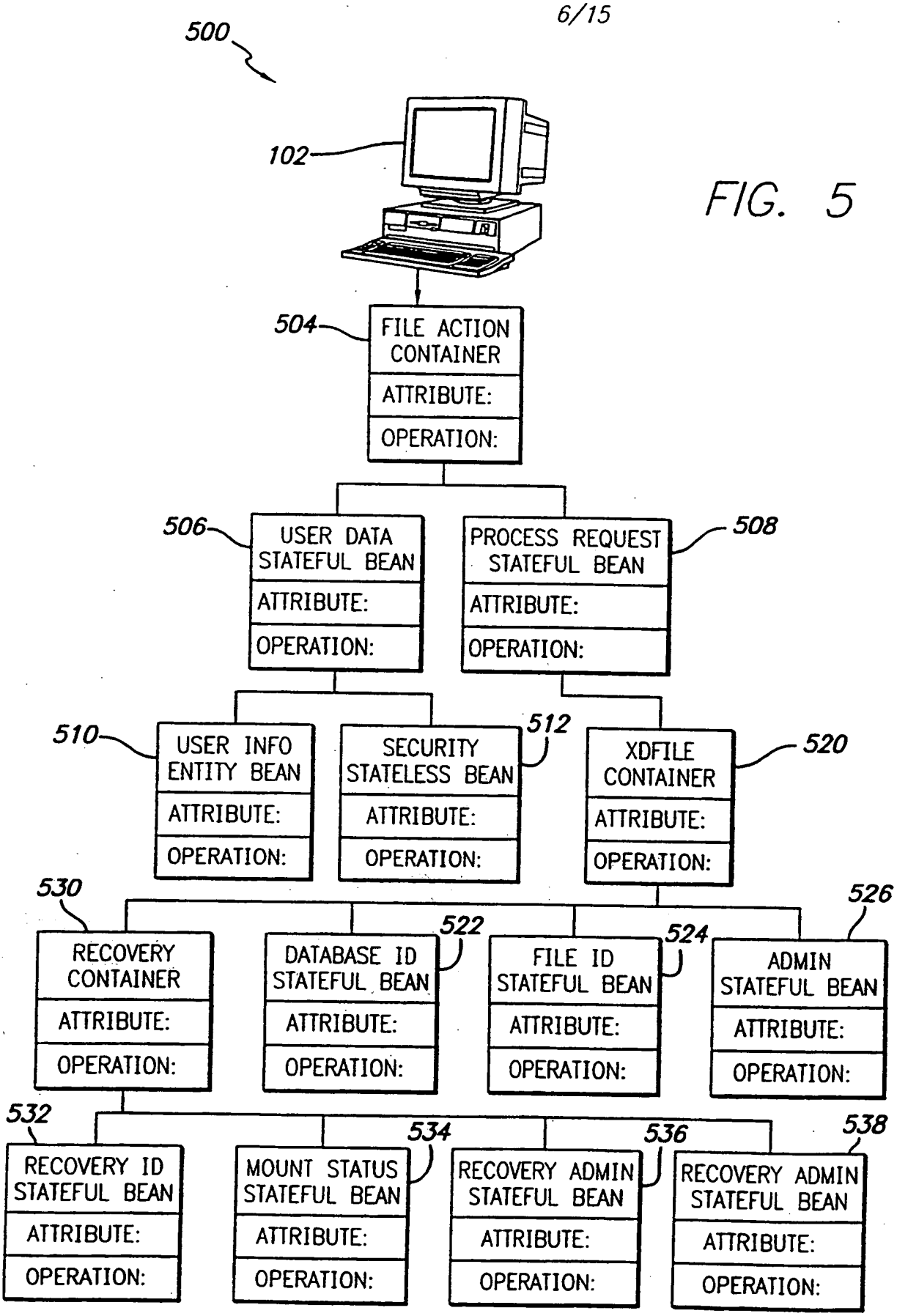
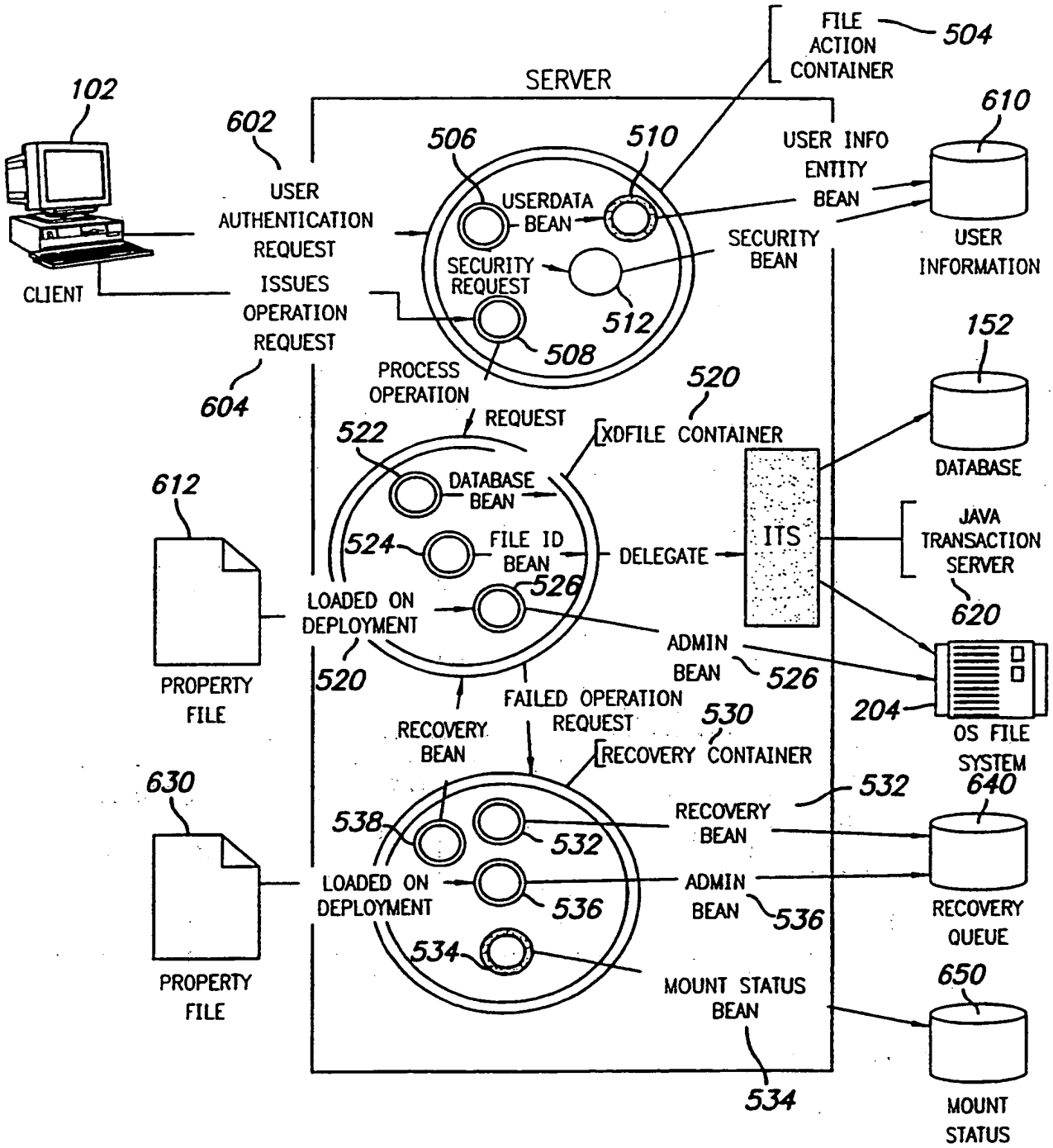


FIG. 5

NSDOCID: <WO 0133381A1 IA>

FIG. 6


FILE ACTION CONTAINER
504
SERVER
102
602
506
510
610
USER INFO ENTITY BEAN
USER AUTHENTICATION REQUEST
USERDATA BEAN
SECURITY BEAN
USER INFORMATION
CLIENT
ISSUES OPERATION REQUEST
SECURITY REQUEST
512
508
152
PROCESS OPERATION REQUEST
604
520
XDFILE CONTAINER
522
DATABASE BEAN
DATABASE
612
524
FILE ID BEAN
DELEGATE
ITS
JAVA TRANSACTION SERVER
526
620
LOADED ON DEPLOYMENT
ADMIN BEAN
526
PROPERTY FILE
520
204
OS FILE SYSTEM
FAILED OPERATION REQUEST
530
RECOVERY BEAN
RECOVERY CONTAINER
630
532
640
538
RECOVERY BEAN
532
LOADED ON DEPLOYMENT
ADMIN BEAN
536
536
RECOVERY QUEUE
534
650
PROPERTY FILE
MOUNT STATUS BEAN
534
MOUNT STATUS

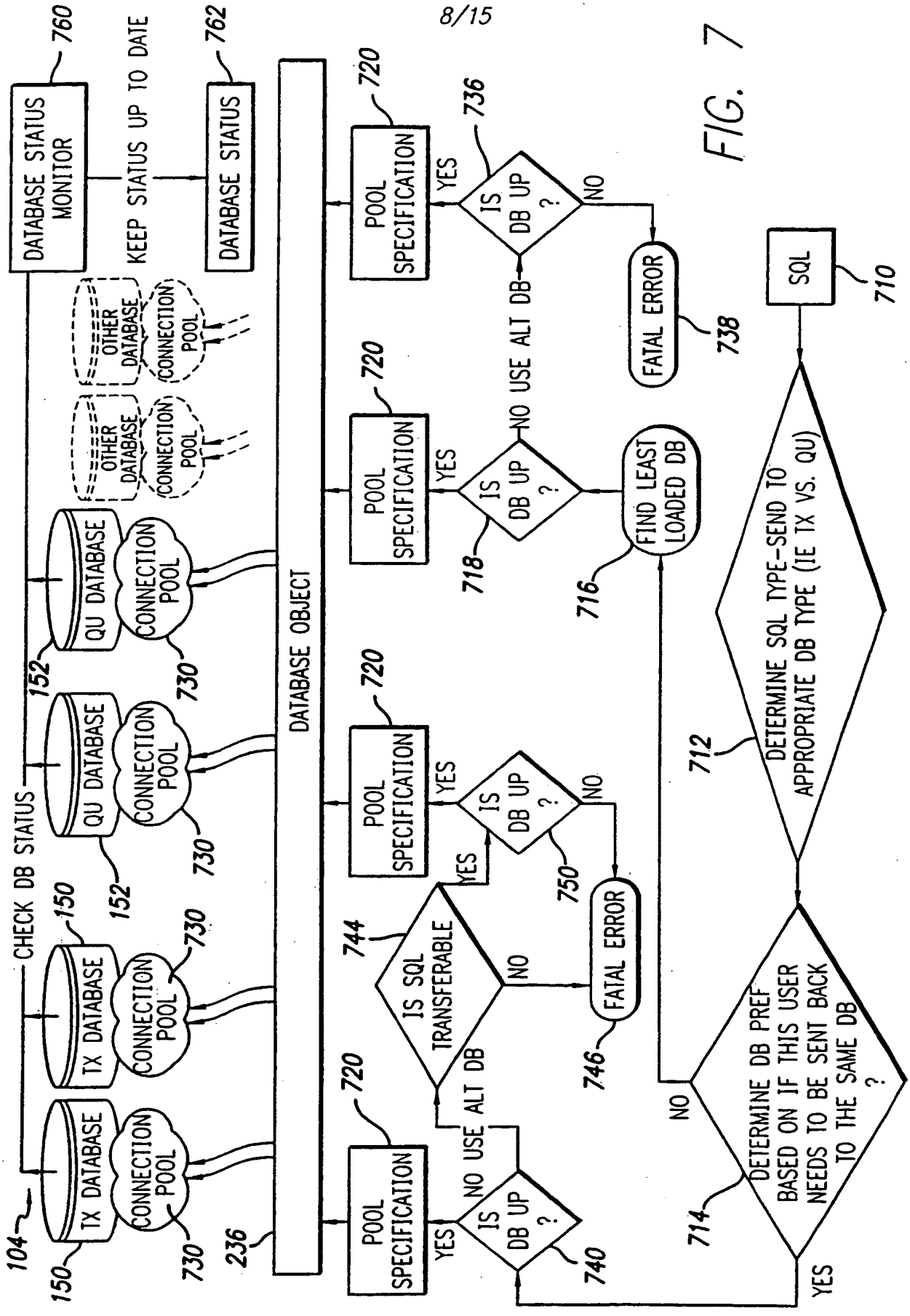
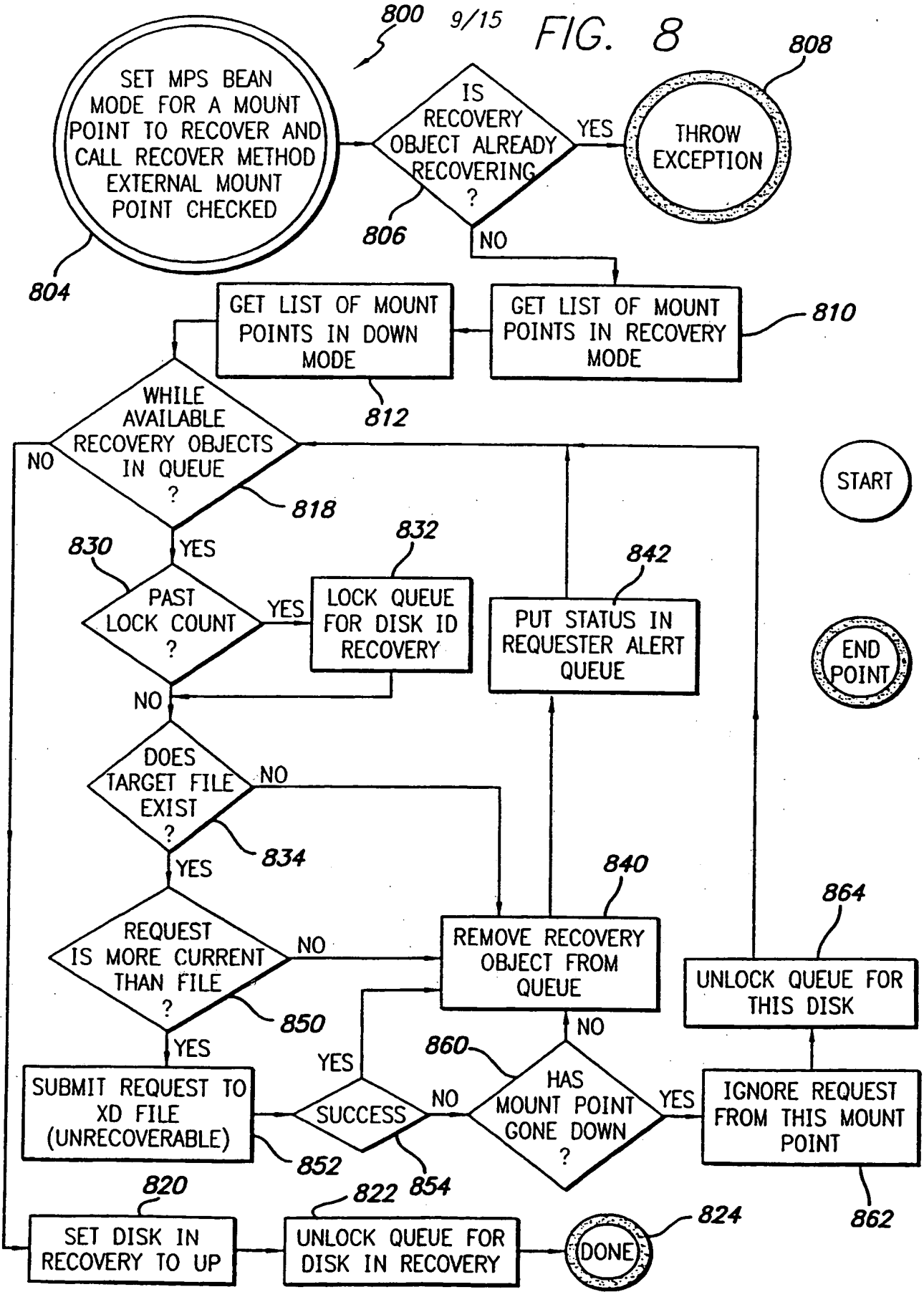

DATABASE STATUS MONITOR
760
KEEP STATUS UP TO DATE
762
DATABASE STATUS
CHECK DB STATUS
104
150
TX DATABASE
CONNECTION POOL
730
152
QU DATABASE
OTHER DATABASE
236
DATABASE OBJECT
720
POOL SPECIFICATION
YES
NO
NO USE ALT DB
IS DB UP ?
736
718
716
FIND LEAST LOADED DB
FATAL ERROR
738
744
IS SQL TRANSFERABLE
746
750
740
712
DETERMINE SQL TYPE-SEND TO APPROPRIATE DB TYPE (IE TX VS. QU)
714
DETERMINE DB PREF BASED ON IF THIS USER NEEDS TO BE SENT BACK TO THE SAME DB ?
SQL
710

FIG. 7

FIG. 8



3NSDOCID: <WO_____0133381A1_IA>

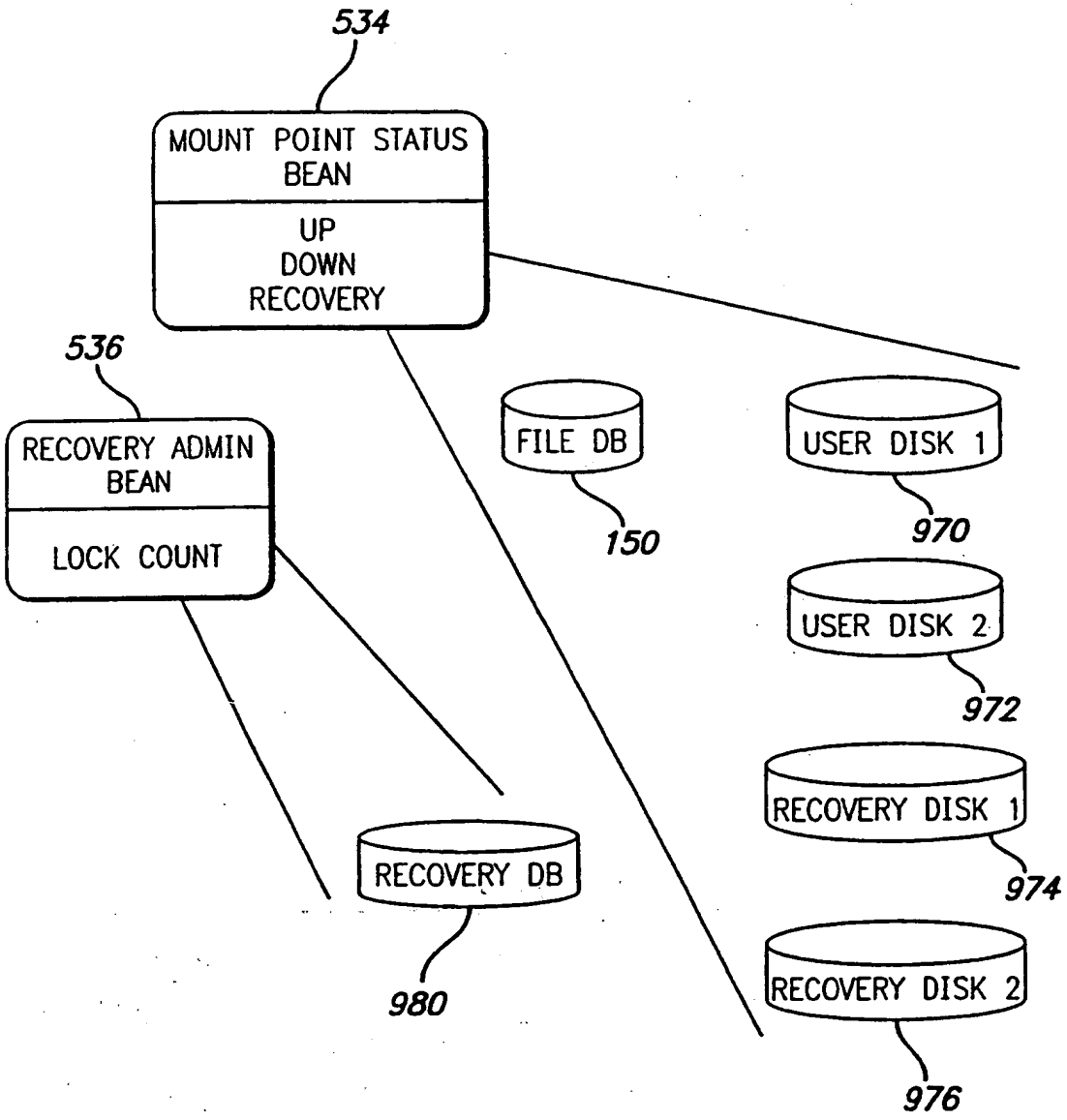
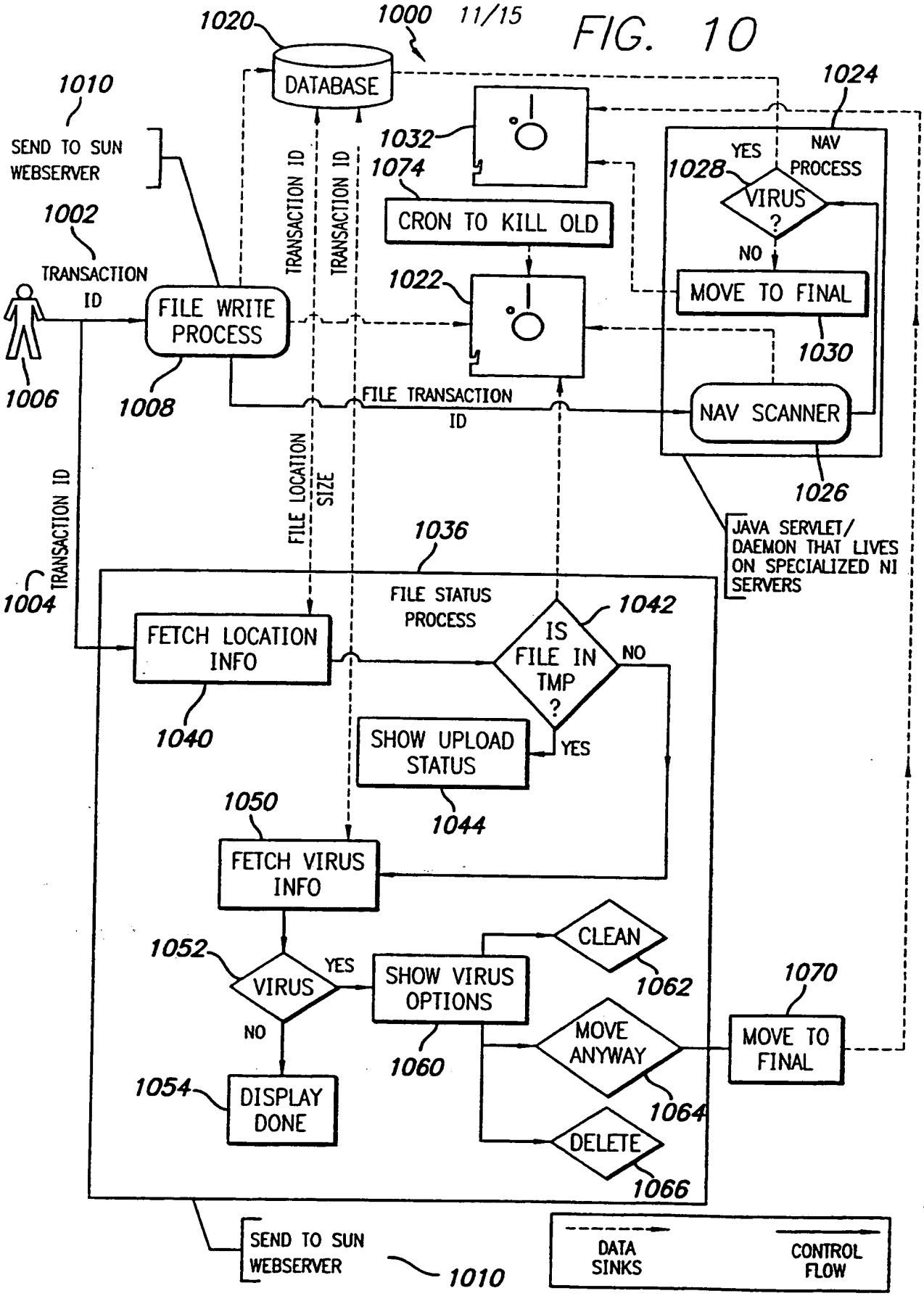

534
MOUNT POINT STATUS BEAN
UP
DOWN
RECOVERY
536
RECOVERY ADMIN BEAN
LOCK COUNT
FILE DB
150
USER DISK 1
970
USER DISK 2
972
RECOVERY DISK 1
974
RECOVERY DB
980
RECOVERY DISK 2
976

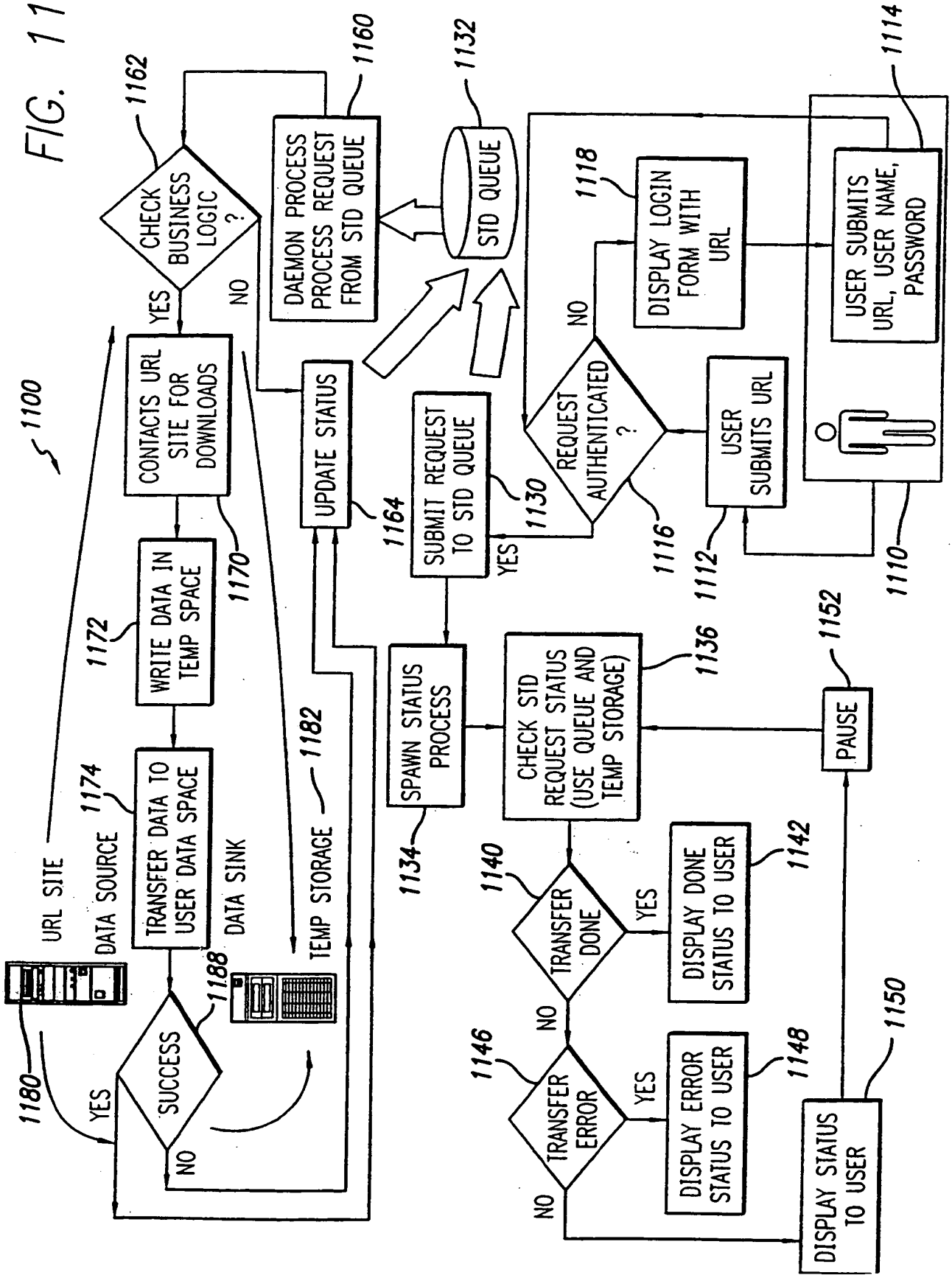
FIG. 9

FIG. 10



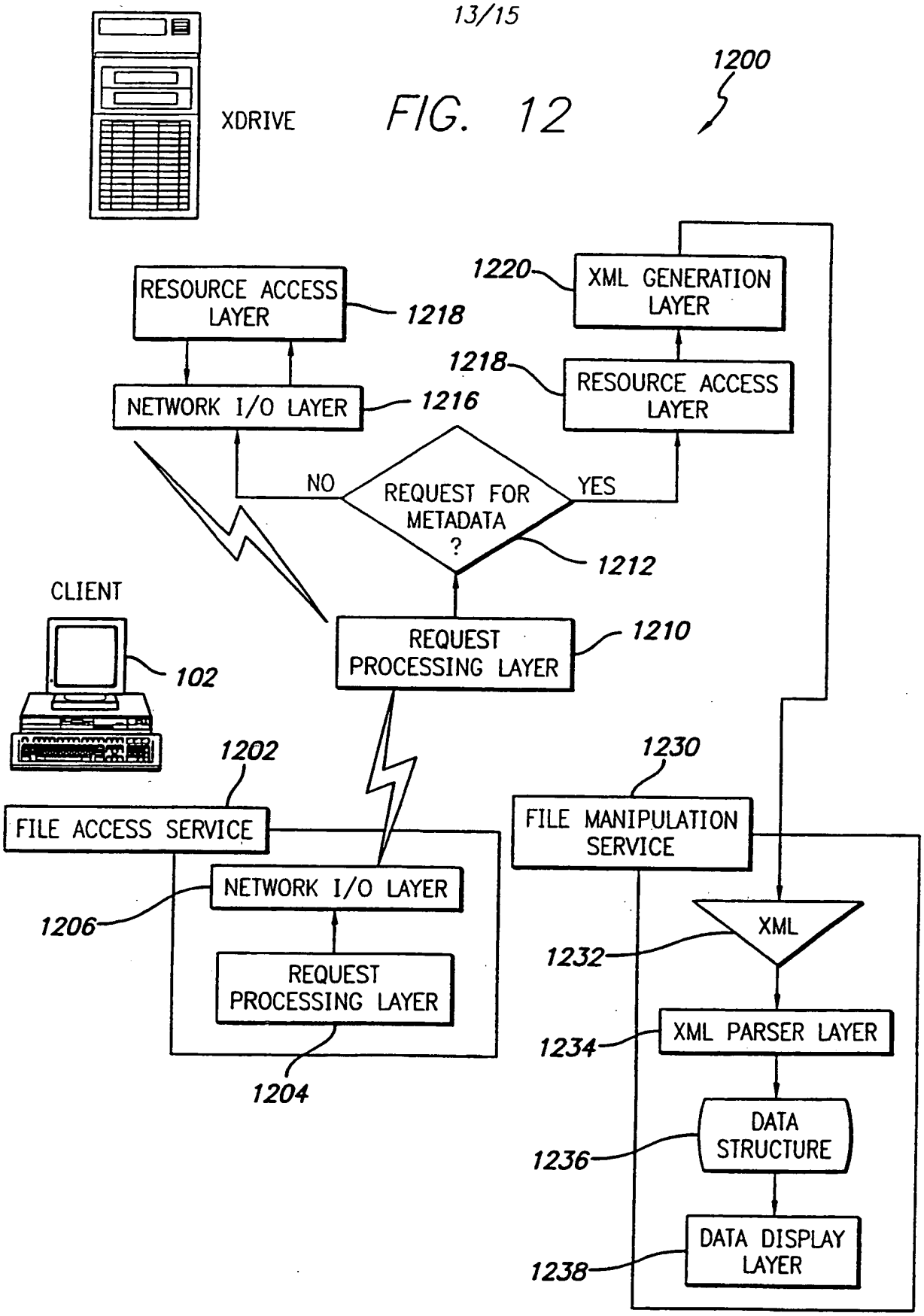
NSDOCID: <WO_____0133381A1_IA>

FIG. 11



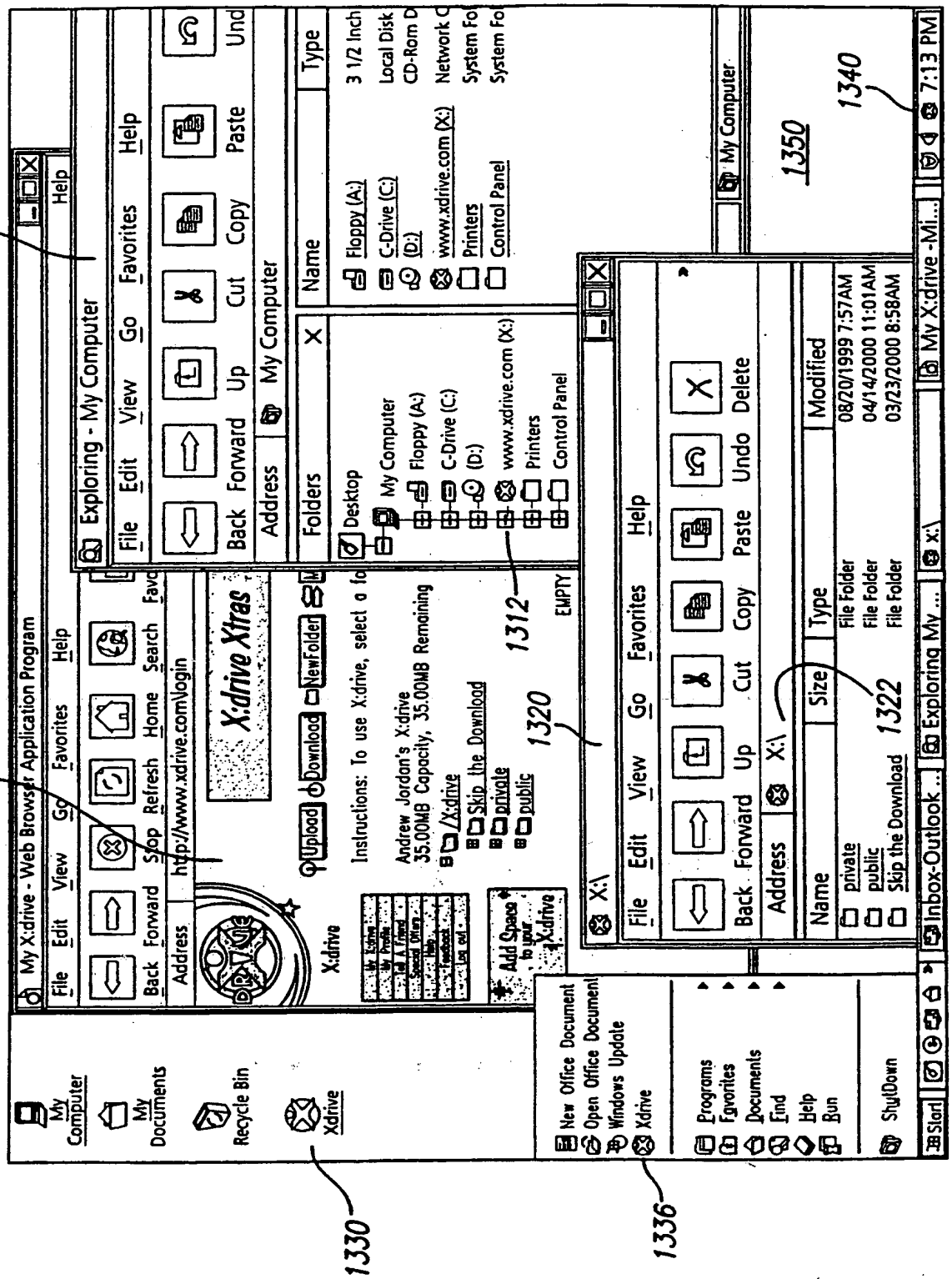
3NSDOCID: <WO 01333381A1 IA>

FIG. 12



3NSDOCID: <WO 013338141 1A>

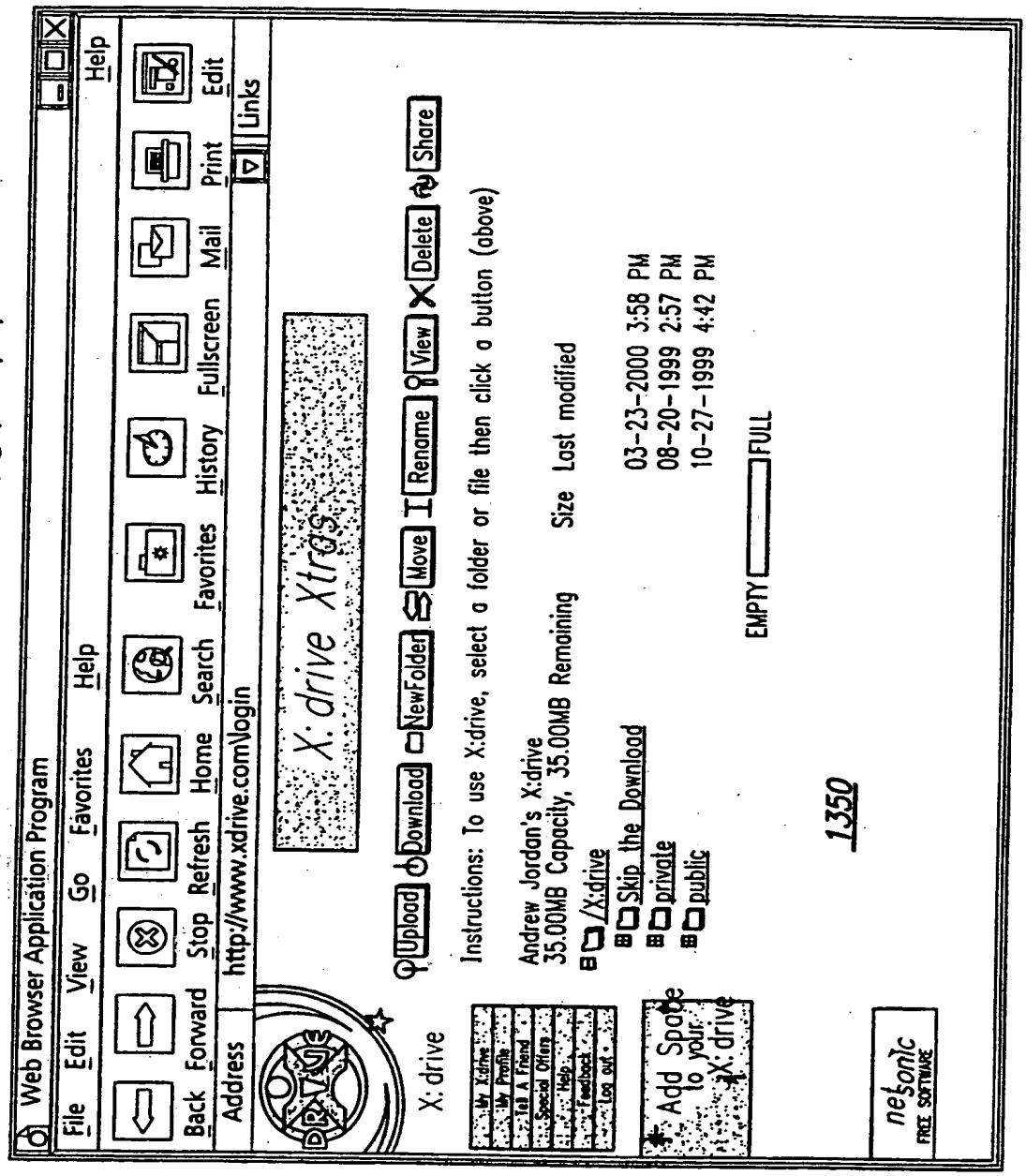
FIG. 13



SUBSTITUTE SHEET (RULE 26)

BNSDOCID: <WO_____0133381A1_IA>

FIG. 14



INSDOCID: <WO_____0133381A1_IA>

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/30536

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :G06F 15/00, 15/16, 17/30; B41B 15/00
US CL :345/326; 707/1,10; 709/104,105,212,213,217,226,229,245
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 345/326; 707/1,10; 709/104,105,212,213,217,226,229,245

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

East, West, IEEE

search terms : network, internet, storage, resource, parse, proxy

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,861,883 A (CUOMO et al.) 19 January 1999, col. 2 line 11 - col 6 line 37	1-50
Y	US 5,956,490 A (BUCHHOLTZ et al.) 21 September 1999, col. 2-6	1-50
Y,P	US 6,049,877 A (WHITE) 11 April 2000, col. 2 line 36 to col. 9 line 57	1-50
Y,E	US 6,154,738 A (CALL) 28 November 2000, col. 4 line 1 to col. 33 line 35	1-50
Y,E	US 6,151,601 A (PAPIERNIAK et al.) 21 November 2000, col. 8 line 35 to col. 25 line 67	1-50
Y,P	US 6,128,624 A (PAPIERNIAK et al.) 03 October 2000, col. 8 line 14 to col. 25 line 27.	1-50

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
10 JANUARY 2001

Date of mailing of the international search report
26 FEB 2001

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231
Facsimile No. (703) 305-3230

Authorized officer
FRANTZ B. JEAN
James R. Matthews
Telephone No. (703) 305-3900

Form PCT/ISA/210 (second sheet) (July 1998)★

!SDOCID: <WO_____0133381A1_IA>

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

CORRECTED VERSION

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
10 May 2001 (10.05.2001)

PCT

(10) International Publication Number
WO 01/33381 A1

(51) International Patent Classification[7]: G06F 15/00, 15/16, 17/30, B41B 15/00

(21) International Application Number: PCT/US00/30536

(22) International Filing Date:
3 November 2000 (03.11.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/163,626 4 November 1999 (04.11.1999) US
09/570,583 12 May 2000 (12.05.2000) US

(71) Applicant *(for all designated States except US)*: **XDRIVE, INC** [US/US]; Suite 2000 North, 1601 Cloverfield Boulevard, Santa Monica, CA 90404 (US).

(72) Inventors; and

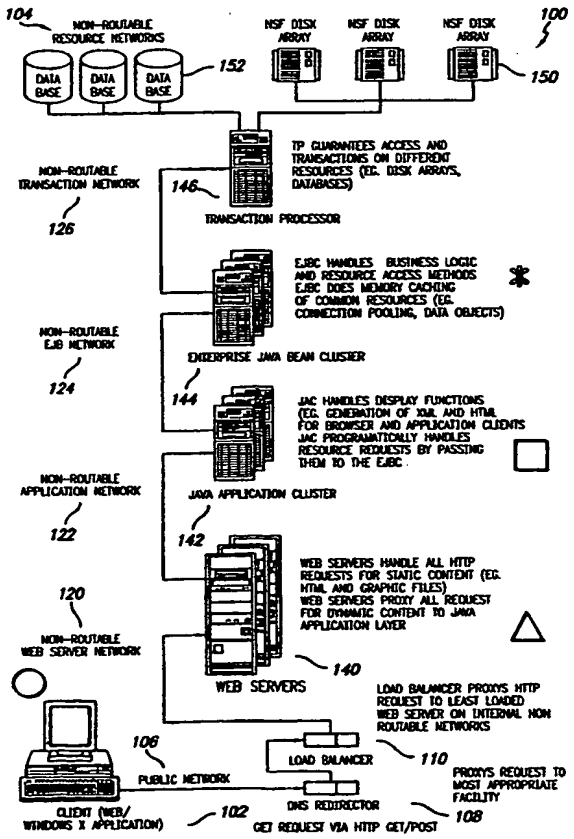
(75) Inventors/Applicants *(for US only)*: **O'BRIEN, Brett** [US/US]; XDrive, Inc., Suite 2000 North, 1601 Cloverfield Boulevard, Santa Monica, CA 90404 (US). **WHITELEY, Sean** [US/US]; XDrive, Inc., Suite 2000 North, 1601 Cloverfield Boulevard, Santa Monica, CA 90404 (US). **MCGREGOR, Lucas** [US/US]; XDrive, Inc., Suite 2000 North, 1601 Cloverfield Boulevard, Santa Monica, CA 90404 (US). **HALD, Martin** [DK/US]; 111 Amherst Aisle, Irvine, CA 92612 (US).

(74) Agents: **JORDAN, Andrew** et al.; Cislo & Thomas LLP, Suite 900, 233 Wilshire Boulevard, Santa Monica, CA 90401-1211 (US).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,

[Continued on next page]

(54) Title: SHARED INTERNET STORAGE RESOURCE, USER INTERFACE SYSTEM, AND METHOD



(57) Abstract: The shared internet storage resources provides Internet-based file storage, retrieval, access, control, and manipulation for user. Additionally, an easy-to-use user interface is provided both for a browser or stand-alone application. The entire method provides means by which users can establish, use, and maintain files on the internet in a manner remote from their local computers yet in a manner that is similar to the file manipulation used on their local computers. A high capacity or other storage system is attached to the internet via an optional internet network that also serves to generate and direct metadata regarding the stored files. A web server (140) using a CGI, Java-based, or other interface transmits and retrieves TCP/IP packets or other internet information through a load balancer/firewall (110) by using XML to wrap the data packets. File instructions may be transmitted over the Internet to the Shared Resource System. The user's account may be password protected so that only the user may access his or her files. On the user's side, a stand-alone client application (142) or JavaScript object interpreted through a browser provide two means by which the XML or other markup language data stream may be received and put to use by the user. Internet-to-internet file transfer may be effected by directly downloading to the user's account space.

WO 01/33381 A1

HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) **Designated States** *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

(48) Date of publication of this corrected version:
10 May 2002

(15) Information about Correction:
see PCT Gazette No. 19/2002 of 10 May 2002, Section II

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

SHARED INTERNET STORAGE RESOURCE, USER INTERFACE SYSTEM, AND METHOD

TECHNICAL FIELD

This invention relates to resources on computer networks, particularly the Internet, and more particularly to a file storage and retrieval system that is available worldwide via the Internet which additionally allows a direct transfer of Internet files to an Internet storage, retrieval, and sharing resource. The present invention acts in the manner of a "Internet hard disk" or "Internet hard drive" to provide online storage and retrieval resources for users.

BACKGROUND ART

The Internet is the worldwide computer network making available a vast number of computer and information resources to institutions and individuals. A significant part of the Internet is the worldwide web that allows for web pages to be written in HTML and transmitted upon demand throughout the Internet. Recent developments have better established the use of XML (Extensible Markup Language) as a subset of SGML (Standard Generalized Markup Language, ISO standard 8879:1986). FTP (File Transfer Protocol) provides means by which files may be transferred over the Internet. All of these protocols are generally well known in the art, and collateral resources can easily be obtained to describe these further.

Patents relevant to the present invention include U.S. Patent No. 5,771,354 issued to Christopher Crawford on June 23, 1998 for an Internet Online Backup System, and U.S. Patent No. 5,901,228 issued to Christopher Crawford on May 4, 1999 for a Commercial Online Backup Service.

Additionally, portable programming systems such as Java®, JavaBeans, and JavaScript have been extensively developed with an anticipation of future portability across the vast network that is the Internet. Java®-related systems allow for object-oriented programming whereby objects or "beans" allow the passing of self-contained modules with associated processing methods that are used to act upon the accompanying data. Consequently, the "bean" can travel through a network and, under appropriate circumstances, have certain processes activated allowing manipulation of the information contained in the bean.

Advancements in Java®-related systems have given rise to the Enterprise JavaBean™ (EJB). The Enterprise JavaBean™ allows for clustering of servers such that the bean is given independence from specific servers on the system, yet can be activated or "instantiated" such that error recovery is easier, the system as a whole is more robust, and processing of the bean can be performed asynchronously so that all events do not have to happen at a pre-set time or serially/one after the other.

Enterprise JavaBeans™/EJBs allow serialization of beans. Such serialization allows the bean to be represented as a data stream of determined length. In essence, this is just a data file that is interpreted in the proper context, much the same as any electronic information file. Such serialization of the EJB allows it to be replicated and stored in case of catastrophic failure of a preferred server or the like.

If the server upon which the instantiated EJB dies, goes down, or fails, a previously replicated twin can be used to continue the process and allow for error recovery. More information about Enterprise JavaBeans™ technology can be found in the white paper, "Enterprise JavaBeans™ Technology: Server Component Model for the Java™ Platform" by Anne Thomas, revised December 1998, prepared for Sun Microsystems, Inc. and published/made available by the Patricia Seybold Group of Boston, Massachusetts.

Due to the nature of new technologies, terms such as "bean" or "instantiated" may seem unfamiliar to those new

SUBSTITUTE SHEET (RULE 26) WO 01/33381A1 IA>

to the pertinent art. Reasons for this include the difficulty of communicating quickly new and complex subjects as well as the good-humored nature of those who intensely pursue the establishment of new technology, particularly software systems. Consequently, for Java®-related systems, a coffee theme is often present that indicates to those knowledgeable in the art the general subject matter of interest. While distinctions may be subtle in the art, they can be very important and serve the ends of those attempting to establish, share, and forward the technology.

Generally, home pages or other web pages are requested by the user through designation of the URL (Uniform Resource Locator). With the transmission to the user via TCP/IP protocol, the information present at the URL (and generally a file located somewhere on a computer) is transmitted to the user. The file may have links, or pointers, to other resources including images, graphics, audio or video streams, or other resources. Mark-up language is used on the Internet in an attempt to provide an open-ended structure by which information of any sort that can be stored electronically (or perhaps even otherwise) can be made available to an end user on demand. As such, the Internet is seen as a powerful tool making almost any information resource available to any computer or to any person using a computer.

Over the past several years, the personal computer has increased in power and capacity as commercial demand has driven the research and development of producers and vendors. It is now not uncommon to be able to easily find an Intel-manufactured 500 megahertz Pentium®-based system having well over 10 gigabytes of hard disk space, as well as 32 - 256 megabytes of RAM. As such, the power by which files may be received and acted upon by the local user through his or her PC has kept pace with the advances in technology.

However, there currently remain obstacles to universal access to an individual's own information stored on his or her computer. First of all, computers are very heavy. They are bulky. They generally weigh several kilograms and are not easily transportable. Lightweight laptop computers or the like generally do not have the same resources available to the user as a regular PC. Additionally, access to local area networks (LANs) is generally not available once the computer leaves the premises occupied by the LAN. Additionally, Internet access is often restricted by the use of a modem. Modems generally provide data transmission speeds on the order of 56 kilobits per second. This is approximately the same as 7 kilobytes per second. However, headers and other information are required to properly transmit information over the Internet and increase the effective size of files.

Even with the increased availability of broad band access to the Internet, it becomes an important feature of electronic information processing and the like in order to provide resident resources on the Internet. Such resources could include the sharing of files and the like in a manner that are easy to use and understand.

Due to these and other restrictions regarding data transport, transmission, and reception, a need has arisen for means by which files and other data may be available worldwide through the Internet and not tied to a local computer. The present invention addresses this demand by providing means by which files and other data may be stored on the Internet and made available worldwide through the Internet.

DISCLOSURE OF INVENTION

The present invention provides an "Internet hard drive" or "Internet hard disk" to and from which files may be stored and retrieved. Denominated commercially as "X:Drive," the present invention allows users to store files of foreseeably any type on a resource available throughout the Internet. Once available to the Internet, the files stored on the user's X:Drive are available to the same extent as the Internet, namely worldwide.

Note should be made that the term "X:Drive" refers both to the system as a whole and to the individual space allocated to an individual user. Consequently, reference is sometimes made herein to the X:Drive system or to X:Drive to refer to the system as a whole. At other times, the term X:Drive indicates the user's individual X:Drive, or allocated

INSDOCID: <WO_____0133381A1_IA>

space. The different uses are indicated by context.

In order to effect the Shared Internet Storage Resource of the present invention, a central or distributed storage facility is provided. First and foremost is the high-speed access storage facility where files are actually stored. Such individual storage areas may be allocated in individual limited allotments, or be left open-ended and limited only by the capacity of the physical devices responsible for storage. Metadata, that is data about the files stored on the network hard drives or other storage devices, is generated and stored in a separate database. The database of metadata (the metadatabase) and the network-attached storage facility may be linked by an internal network. It is possible for the database to be stored on the same network storage facility or device on which user files are also stored. System management may select whether or not to distribute or consolidate the database with the network storage.

Also attached to the internal network is a web server that serves to generate and transmit the information to the Internet, and ultimately the user. The web server files may pass through a load balancer and/or firewall before proceeding on to the Internet. The same is similarly true for information coming into the web server from the Internet.

XML may be used in combination with JavaScript or the like to provide two means by which the Shared Internet Storage Resource of the present invention may be achieved. The first is a JavaScript object which may be transmitted to a browser program running on the user's computer. Such browsers may include ones that are well known, including Netscape® Communicator and Microsoft® Internet Explorer. Alternatively, a stand-alone application may be installed and stored upon the user's computer. This stand-alone application serves to intermediate the user commands with the web server and ultimately the metadatabase in the Internet storage device.

As an additional enhancement, the user interface may be a client program that meshes seamlessly with standard user presentations in WYSIWYG (what you see is what you get) graphic user interfaces (GUIs). As such, a drive may be shown on the user's computer and may be denominated "x:" (or "y:" or "z:", etc., depending upon user preferences). The user can then read from or write to the x:\ Shared Internet Storage Resource drive much in the same way as you would the local a:\ and c:\ hard drive.

When the user shuts down his or her computer, information that is stored on the Shared Internet Storage Resource of the present invention remains on the Internet. The user can then access such information from another computer, another geographic location, or even give permission to share files on the Shared Internet Storage Resource with others. Password protection or other security protocols may be used to limit or discriminate access to the user's files.

The Shared Internet Storage Resource of the present invention allows for direct Internet-to-Internet file transfer to a user's allocated X:Drive file space in a process referred to as "Skip the Download" or "Save to My Xdrive."

BRIEF DESCRIPTION OF DRAWINGS

Figure 1 is a schematic view of the X:Drive system of the present invention. The different tier levels are shown, along with the marking indicia of a circle, triangle, square, and star/asterisk corresponding to the same indicia in Figure 3.

Figure 2 is a schematic view of Java® library objects operating in the transactions or data exchanges occurring in the present invention.

Figure 3 is a detailed flow diagram showing the operation of the present invention. Indicia including a circle, a triangle, a square, and a star/asterisk correspond to tier levels shown in Figure 1 and indicate the level of operation of the steps shown in the flowchart of Figure 3.

Figure 4 is a flowchart showing the operation of the XDFile Enterprise JavaBean™ (EJB) used in the present invention.

BNSDOCID: <WO 0133381A1 IA>

Figure 5 is an overview of the Java® architecture used to effect transactions in the present invention.

Figure 6 is an alternative schematic diagram of the Java® architecture shown in Figure 5.

Figure 7 is a schematic and flowchart diagram showing the IO (input/output) for the database transactions of the present invention.

Figure 8 is a schematic diagram of the data recovery process as effected by the FileIO component of the XDFile object used in the present invention.

Figure 9 is a schematic depiction of failure recovery elements.

Figure 10 is a schematic and flowchart diagram showing virus protection effected in the present invention.

Figure 11 is a schematic and flowchart diagram of the Internet-to-resource transfer ("Skip the Download"/"Save to My Xdrive") as set forth in the present invention.

Figure 12 is a schematic and flowchart diagram of the client system used in the present invention.

Figure 13 is a Windows™ desktop display showing both the client and web-browser applications.

Figure 14 is a display of a web browser pointing to a user's X:Drive.

BRIEF DESCRIPTION OF APPENDICES

Appendix 1 is a listing of web site/server code use to achieve the present invention.

Appendix 2 is a listing of the code used on the client side to achieve the present invention in a Microsoft® Windows™ environment.

Appendix 3 is a listing of the JavaScript code used to achieve the present invention in a Sun Microsystems® Java® environment (including one on a browser).

MODE(S) FOR CARRYING OUT THE INVENTION

The detailed description set forth below in connection with the appended drawings is intended as a description of presently-preferred embodiments of the invention and is not intended to represent the only forms in which the present invention may be constructed and/or utilized. The description sets forth the functions and the sequence of steps for constructing and operating the invention in connection with the illustrated embodiments. However, it is to be understood that the same or equivalent functions and sequences may be accomplished by different embodiments that are also intended to be encompassed within the spirit and scope of the invention.

Appendices 1, 2, and 3 provide the source code for, respectively, the Web Site/Server Code of the X:Drive Shared Internet Storage Resource system of the present invention; the Windows Client Code; and the JavaScript Listings for the present invention. These Appendices are incorporated herein by this reference thereto as if set out in their entirety. It is contemplated that these Appendices provide a full, complete, and enabling disclosure to those of ordinary skill in the art or less by which the present invention may be achieved.

Additionally, the reference numbers used in conjunction with the figures are numbered such that the 100's place of the number indicates the number of the drawing figure. For example, the 600 series of reference numbers refers to Figure 6, while the 200 series refers to elements shown in Figure 2.

The present invention provides a method by which an Internet hard disk or hard drive may be achieved in a manner similar to a hard disk or hard drive available locally to the individual on the local computer. Additionally, as Internet use becomes a more familiar and everyday event for people, the resources provided by the present invention may allow the actual use of the Internet hard drive or X:Drive set forth herein to act as such a resource with the files being called up for execution for programs available and processed either locally and/or over the Internet. In light of the

NSDOCID: <WO_____0133381A1_IA>

foregoing, it can be seen that the present invention may act as a bridge or may pave the way towards a more inter-networked community for the use and processing of electronic information.

The virtual disk drive provided by the present invention may be selectively shared with others or kept entirely private. Additionally, and as set forth in more detail below, the use of a metadatabase provides quicker access and the ability to distribute the information regarding the legion of X:Drive accounts over a wide geographic area, enabling redundant preservation of user information by server clusters implementing Enterprise JavaBeans® (EJBs), or otherwise.

The Shared Internet Storage Resource, User Interface System, and Method set forth herein is generally referred to as "X:Drive." Context reveals whether or not the term X:Drive is referring either to the system as a whole or the individual's own account.

The X:Drive system of the present invention uses network application practices and may rely upon Java® Enterprise JavaBeans™ (EJBs) to enable distributed and clustered computing and file management environment. Along with such Java®-based and network-oriented design, the X:Drive system of the present invention also contemplates the use of open programming standards such as XML and Web-DAV (Web-based Distributed Authoring and Versioning). The use of such technology is foreseen as providing wide support by the user community as well as speed and development, refinement, and polishing.

As shown in Figure 1, the X:Drive system **100** has a multi-tiered, network-based application infrastructure. The multi-tiered nature of the system allows it to separate operations in an efficient manner. The network-based aspects of the X:Drive system allows it to disperse resources geographically as well as allow a high degree of communication between different aspects or facets of the system.

The X:Drive system may be considered enabling technology as a medium that is independent of the applications and uses to which it is applied. The X:Drive system is currently based on object-oriented principles with each application layer responsible for a discreet functionality or aspect of operation. Both hardware and software resources may then successfully experience heavy re-use with both scalability and flexibility inherently provided. While these advantageous aspects of the X:Drive system are achieved, as a multi-tiered system, X:Drive involves a higher cost of complexity and planning. Thus, those who would seek to wrongly copy the X:Drive system would do so without accruing the great expense in time and money necessary to achieve the present X:Drive system. They would ride on the backs of those who not only developed the system, but also those who got it to work right and in a commercially-reliable manner.

The use of tiers in the X:Drive system of the present invention is realized in both the network systems and the application systems involved in achieving X:Drive.

As shown in Figure 1, a variety of tiers, or layers, are present between the client **102** and the ultimate data resources **104**. Between the client **102** and the data resources **104**, are one or more layers or tiers, accomplishing the following.

The client **102** may be coupled to a public network **106** (such as the Internet) that may include a DNS redirector **108** as well as a load balancer **110**. The public network **106** may then lead into a web server network **120**. The web server may then lead into an application network **122**, which in turn leads into an EJB (Enterprise JavaBeans™) network **124**. The EJB network **124** may lead into a transaction network **126**, which in turn leads into the data resources **104**.

The client **102** may be either a web- or browser-based application or an application resident on a Windows™ X system (the X indicating the version of Windows applicable, i.e., Windows® 95, Windows® 98, Windows® 2000, etc.). Requests generally originate from the client as the X:Drive system **100** is one that operates at the command of users directing the client program. Client requests may be made versus the Hypertext Transfer Protocol (HTTP) GET/POST

BNSDOCID: <WO 01333381A1 IA>

function. In a preferred embodiment, the GET/POST operation may be augmented with Web-DAV extensions to the HTTP protocol. Commands are transmitted by the client **102** are sent to the DNS redirector **108**, which then isolate the request via a proxy server process. A proxy server process prevents a direct connection between the client **102** and the other downstream resources in the X:Drive system **100**. Such proxy serving prevents inadvertent or mischievous disruption of service by allowing only certain commands or information to be propagated through the X:Drive system **100**. This prevents mischievous users from disrupting the system as such rogue commands are intercepted by the proxy server and denied further propagation.

After the client command has passed through the DNS redirector/proxy server **108**, the request by the client **102** is then directed to the most appropriate facility. As the X:Drive system is scalable, facilities may be distributed geographically, even over the face of the globe. This allows, at the outset, more efficiencies to take place in the X:Drive system **100** of the present invention so that more users may be served more quickly and so that the advantageous features of the X:Drive system may be realized by the widest number of users in the quickest way possible.

Due to the construction and architecture of the X:Drive system **100**, a number of machines/servers running a number of different processes may be distributed over a wide area. Broad band or high-speed access as provided by Internet backbone or the like may allow the X:Drive system to be effectively carried out over the entire face of the planet. The scalability and flexibility of the present invention augments its utility. Such advantages are further advanced by efficient use of the resources so that greater and better service can be provided.

Upon receiving the request from the client **102**, the DNS redirector **108** transmits the requests on to a load balancer which may provide a second proxy process under HTTP protocol and transmit the request to the least-loaded and most-available web server on an internal, non-routable, or other server network **120**.

The web server network **120** may be non-routable and may comprise a number of individual machines or servers processing the HTTP or other requests from one or more load balancers **110**. Each of the web servers **140** in the network **120** may handle HTTP requests for static content, such as HTML and graphic files. The web servers may proxy all requests for dynamic content to a Java® application network **122**.

As used in the X:Drive system **100** of the present invention, the Java® application networks may be non-routable. The use of non-routable facilities in the X:Drive system **100** of the present invention indicates their operation in a local area network (LAN). However, between tiers, the individual networks themselves may be available such that a web server **140** in Illinois may pass requests for dynamic content to Java® application clusters **122** in Wisconsin.

Each Java® application cluster **122** may be composed of a number of Java® application servers **142** with each server **142** handling display functions necessary for user accounts, including the generation of XML, HTML, and other instructing displays for either browser or application clients **102**. If a Java® application cluster **122** receives a resource request from the web server tier **120**, the Java® application cluster **122** will pass the resource request onto the Enterprise JavaBean™ EJB network tier **124**.

As for the web server **120** and Java® application networks **122**, the EJB network **124** may also be non-routable and operate upon a LAN. The EJB network may be an EJB cluster having a number of EJB servers **144**. Each EJB cluster handles the business logic and resource access methods and protocols required for the resource requests and management. The EJB cluster (EJBC) caches memory of common resources such as the pooling of data connections and the like, as well as data objects. Resource access requests and transmissions are then passed out to the transaction network tier **126**, which may also be non-routable. The transaction network tier **126** has a transaction processor **146** which controls, operates, and guarantees access and transactions on different resources. These different resources are the ultimate data resources **104** that may include NFS (Network File Server) disk arrays **150** and databases **152**. The NFS

INSDOCID: <WO_____0133381A1_IA>

disk arrays **150** may supply the actual storage capacity for the files of generally any size. The databases **152** comprise records of information regarding each of the files (metadata) stored by the NFS disk arrays **150** under the X:Drive system **100**.

By bifurcating the file information in databases **152** separate from the actual files themselves on the NFS disk arrays **150**, file information and user queries can be handled much more quickly as display components of the present invention are important to provide the user information regarding the status and availability of the files stored on the X:Drive system **100**. Consequently, although a user may have a hundred separate files in an X:Drive directory, he or she may be only interested in one. Consequently in order to provide the user the information necessary to make the decision as to which file to receive, move, rename, delete, or store, the use of the database provides a very quick and easy means by which such user requests can be satisfied. It is anticipated that the actual use of the file storage facilities on the NFS disk arrays **150** or the like may comprise only a part of the operations of the present invention. Having the ability to display, select, and determine file operations is one of the useful advantages provided by the X:Drive system **100** of the present invention.

Note should be taken of the non-numerical indicia present in Figure 1. Most notably, a circle is associated with the client **102**, a triangle with the Java® application cluster **122**, a square with the EJB network **124**, and a star/asterisk with the transaction network. These non-numerical indicia correspond to those set forth in Figure 3. As different actions are performed at different tiers in the present invention, the non-numerical indicia provide an easy or visual means by which the operation of the different tiers can be indicated in Figure 3.

Figure 2 shows a logic diagram in sequence structure for the Java® library objects used in the X:Drive system **100** of the present invention. Generally, throughout the description of the X:Drive system **100** of the present invention, the prefix XD indicates "X:Drive." For example, in Figure 2 the steps/status indicators of XDError stands for X:Drive Error, and XDXML stands for X:Drive Extensible Markup Language. Likewise, the use of the term XDFile indicates X:Drive File as a Java® library object effecting and intermediating the file operations of the present invention.

In Figure 2, the Java® system **200** allows operations to be performed on the metadatabase **202** and the operating system (OS) File System **204**. Additionally, the XDFile object **210** may activate or instantiate the Database.Search object **216**. The XDFile object **210** may be activated, or invoked, by the FileAction object **220**. The FileAction object **220** may also activate the Database.Search **216** and Database.BigSearch **222** objects. Operations of the Java® library objects in the system **200** as shown in Figure 2 may be contingent upon the SessionSecurity object **224**, which may instantiate or use the Database.Search object **216** and/or the Database.Transaction object **214**. The SessionSecurity object **224** may return a separate object **226** to the UserData object **230**. The Database object **236** may inherit or transmit from its Transaction **214**, Search **216**, and/or BigSearch **222** objects.

The information generated may then be transmitted to the Database **202** for meta-information and the OS File System **204** for the actual data. If an error is generated during the operation of the Java® library object system **200**, an XDError object **240** may serve to handle the error while a successful operation may be returned in the form of the XDXML object **242**. In the Java® library object system **200** of Figure 2, the Database **202** may contain intelligence or programming for connection to SQL databases and the like. Options regarding the operations of the database **202** may be read from a configuration file. The Database object **236** may be able to connect multiple databases for redundancy in the case of repeated or redundantly archived information, or for functionality in order to connect to that database which responds most quickly to the requests and commands.

The Database object **236** determines which database operation to perform and/or to which database to send operations based on the type of request it receives. For example, transaction requests may demand a separate database

RNSDOCID: <WO 01333814A1 I>

from those of regular query and BigSearch **222** requests. In order to maintain more efficient operation, the Database object **236** generally sends session users to the same database whenever possible so that latency and database replication is not passed on to the user.

The Database.Transaction object **214** is able to handle larger SQL statements such as those that would cause a load on the database. The Database.Transaction object **214** may spawn children classes that handle the transaction logic in order for more efficient operation.

The Database.Search object **216** is designed to handle smaller SQL statements and has children classes for specific search types, such as those along anticipated and common fields or types of information.

The Database.BigSearch object **222** handles larger, non-transactional SQL statements such as those used for reports in system accounting, monitoring, or otherwise. Children classes of the Database.BigSearch object **222** would handle specific large searches such as those that might be implemented on a monthly or other periodic basis.

The FileIO object **212** inherits and overrides Java®'s data file object. The file object contains logic to engage multiple disks or resources for redundancy and/or functionality and contains the functionalities necessary to manipulate files on the OS File System **204**. The FileIO object **212** may react to the JMS (Java Messaging Service) events triggered by events on the disks of the OS File System **204**.

Alternatively, one or more monitoring objects may be used to gather pertinent status information regarding the OS File System **204**. When monitoring objects are used, the FileIO objects then query the common monitoring objects to determine the state of the system. In the present system, the monitoring object is denominated the Mount Point Status bean, or MPS bean, **534** (Figures 5 and 9).

Additionally, disk level transactions are carried out by the FileIO object **212**. Under the management of the FileIO object **212**, user accounts are able to span or traverse several disks. The spanning of such several disks enables better recovery from failure should an error occur or system resources become unavailable in an unpredictable manner. The XDFile object **210** uses FileIO **212** to handle the file system transactions. By using the Database.Transaction file object, the XDFile object **210** handles database file transactions. The XDFile object **210** coordinates transactions for both the FileIO object **212** and the Database.Transaction file object **214** to keep both synchronized and to handle failure should it occur.

The UserData object **230** holds user data for a session of the X:Drive system. A session is basically a span of time for which a user engages the X:Drive system. Methods are included in the UserData object **230** to manipulate the user status, so that the activity may be monitored, as well as whether or not the user has logged in.

The SessionSecurity object **224** uses web logic session mechanisms to create the UserData object **230**. It does this by returning a separate object **226**. The SessionSecurity object **224** authenticates a user's login and expires old sessions with re-direction of such old sessions to appropriate pages.

The FileAction object **220** may have children classes and contain logic for determining request types such as user requests, administration requests, etc. Tests for file action requests such as quotas and permissions, etc., may also be handled by the FileAction object **220**. The FileAction object **220** accesses the file methods in the XDFile object **210**.

The XDError object **240** reads a configuration file of error lists which gives each error an I.D. number. Such error lists preferably pivot on the language in which the X:Drive system **100** of the present invention is programmed. Such lists should also be able to pivot on the partner with which the X:Drive system **100** operates. Default values for the lists may be to X:Drive errors in the English language. The XDError object **240** preferably holds errors in a stack and returns any such errors from the stack. Additionally, the XDError object **240** preferably accepts new errors by code or by message.

3NSDOCID: <WO 0133381A1 IA>

The XDXML object 242 accepts an object and delivers as output an XML representation of a transaction or status requested by the user or client software.

Figure 3 shows the data flow through the X:Drive system 100 of the present invention, particularly that as reflected by the tiered configuration shown in Figure 1. From a starting point 300, a request is sent by HTTP POST/GET command at step 302. Web-DAV protocol may also be used and is currently considered preferable. The send request is implemented on the client 102 and is evaluated by the web server 120 as a request for static content in step 304. If the request is for static content, the file is served by the web server 120 at step 306, and the file is displayed at step 308 by the client 102.

If at step 304 the request for static content is evaluated as negative, a proxy request is issued by the web server network 120 to the Java® application cluster 122 at step 312. The request is received by the Java® application cluster (JAC) 122 and submitted to a servlet at step 314. The Java® application cluster (JAC) 122 then parses the request header at step 316. The Enterprise JavaBean™ (EJB) network 124 then authenticates the request at step 318. If authentication cannot be achieved, process control is then re-directed to the re-login page via the JAC network 122 at step 320. If authentication succeeds at step 318, the JAC network 122 then parses the multi-part form data at step 324.

The JAC network 122 then determines the type of request at step 326. The request is then submitted to the FileAction EJB 220 at step 328. The EJB network 124 then evaluates the request at step 330 in order to ensure that all the business rules and other applicable limitations are met, such as quota limitations, permissions, and the like. If the evaluation is successful at step 330, the EJB network 124 then submits the request to the XDFile EJB 210 at step 332 and on to the transaction processor 146. The appropriate actions are then taken via the transactional database 152 and the disk arrays 150. If the business rule evaluation 330 fails, an error may be generated and, as for other errors in the data flow process of Figure 3, a session error object 334 may be generated in a session error stack 336.

In effecting the data transfer to the ultimate system resources 104, evaluation is made as to the operation in step 340. If the operation is not a data read operation such as a directory listing or file read, the error stack is checked at step 342. If an error has occurred, the error status is sent to the client 102 at step 344. The client 102 then accepts the transmitted XML code and renders the appropriate display for the user at step 346. If the error stack evaluation step 342 does not reveal any error, a success message is generated at step 350, and the subsequently-generated XML is received by the client 102 and displayed by the user at step 346.

If at the evaluation step 340, the operation is not a data read action, the error stack is checked at step 352 much in the same way as it was at step 342. If an error has occurred, the error status is sent to the client 102 at step 354. The error status message is then received as XML code by the client 102 at step 346 and displayed to the user. If at evaluation step 352 the error stack reveals no errors, the evaluation is then made by the EJB cluster as to whether or not the operation is a file read at step 360. If the operation is a file read, the data stream is converted to a network stream and transmitted as a file to the client 102 by the Java® application network 122 at step 362. The data is then accepted by the client 102 and served to the user at step 364.

If at evaluation step 360 the operation is not a file read (see Figure 4), then by elimination, the action is a request for file metadata such as a directory listing indication of file attributes or the like. At step 366, the metadata retrieved from the database 152 is then translated into XML format by the EJB cluster 124. The XML data is then transmitted to the JAC network 122, which encapsulates the XML from the network and sends it on to the client at step 368. The JAC network 122 then sends the encapsulated XML to the client 102 for rendering and display at step 346.

As indicated in the description above with regards to Figure 3, users utilizing the client system 102 to connect to the X:Drive system 100 do so via the public Internet and then submit requests and receive replies effecting or indicating

BNSDOCID: <WO 0133381A1 IA>

the user's requests. Requests for file manipulations, such as uploads, downloads, copies, moves and updates travel through each functional layer of the X:Drive system **100**.

The core of the EJB cluster, and as indicated in Figure 2, the XDFile EJB provides core effectiveness in the present X:Drive system **100**. The XDFile EJB **210** is a multi-tiered component. The X:Drive system **100** stores file metadata (such as directory structure, file name, file attributes, etc.) in the database **152** for fast retrieval, sorting, searching, linking, and other capabilities beyond standard file systems. The actual file data is stored by the X:Drive system **100** in network-attached storage units or storage area networks such as those shown in Figure 1, the NFS disk arrays **150**.

To access files that exist in this hybrid environment (bifurcated between file information and file data), X:Drive uses the XDFile object **210** to manipulate both files and file data in two-phase committal transactions. Figure 4 shows the details of these transactions.

In Figure 4, the XDFile EJB system **400** allows entry at any one of the five darkened triangles. If the action is to be a copy, entry is made at the copy entry point **402**. If the action is a file read, entry is made at the file read point **404**. If the action is a file write, entry is made at the file write point **406**. If the action is a file delete, entry is made at the delete point **408**. If the action is a file move, entry into the XDFile EJB **210** is at the move entry point **410**.

Beginning first with a file copy action beginning at the copy point **402**, the evaluation of the operation occurs at step **420**, where determination is made whether or not the action is a read transaction. If the action is a read transaction, program flow proceeds onto the read action and entry point **404**. The corresponding database action **424** is then taken. As the action is a read transaction, the corresponding database record is read and evaluation is made as to whether or not the database action, in this case read action, has been successful at step **428**. If the read action is not successful, the changes are then rolled back, if any, at step **432**. An error is then returned at step **436** and the XDFile object awaits further instructions. If the evaluation at step **428** regarding the database action was successful, action can then be taken on the actual file itself on the OS File System **204** at step **440**. In the present case, the FileOS Action **440** is a read action, and the file may be read into a temporary buffer or other memory space. The FileOS Action is evaluated for success at step **444**. If the FileOS Action step **440** was unsuccessful, a fatal error is returned at step **448**, and the changes, if any, are rolled back at step **452**. If the evaluation at step **444** was successful, evaluation is made as to whether or not the action was a copy read at step **456**. If the action was a copy read, return is made to the copy entry point **402** at step **464** in order to perform the write portion of the copy function. If the evaluation at step **456** indicates that the action was not a copy read action, evaluation is made at step **468** to determine if the action was a move/copy action. If the action was a move/copy action, control is then directed towards the move entry point **410** via step **472** in order to delete the original file as the success of the move/copy transaction at evaluation step **444** indicates the success of the file write step of the FileOS Action step **440**. Program control is then turned over to the move/action entry point **410** so that the original file may be deleted at its original location via the delete entry point **408**.

If the move/copy evaluation step **468** indicates that not only was the action not a copy read, it was also not a move/copy, then the action is committed to the system at the ultimate system resource level **104** at step **480** and an indication of success is then returned at step **484**.

Upon reaching the move entry point at **410**, evaluation is made at step **490** to determine whether or not the transaction is a copy transaction. If it is a copy transaction, the program then enters and executes the copy entry point **402**. If not, the delete entry point **408** is activated to effect the remainder of the move transaction.

Consequently, it can be seen that a variety of actions take place depending upon the state of the XDFile EJB **210** at the database action **424** and FileOS action **440** steps.

NSDOCID: <WO_____0133381A1_IA>

In performing file reads and writes, simple one-step actions are taken because neither of these read or write actions are either copy reads 456 or move/copy 468 and so they fall into the system commit 480 and return a successful indication at step 484. The same is generally true for the one-step delete action. Consequently, whenever a user wants to read, write or delete a file, entry can be made into the respective entry points at 404, 406, and 408. Errors are returned when necessary.

However, the copy action 402 and the move action 410 require multiple loops through the XDFile EJB 210 in order to effect their operations. For the copy function 402, the initial read must be made successfully with the evaluation step 456 then prompting the write step to occur by the return to the copy entry point at step 464. The read transaction step 420 is then evaluated in the negative and the write entry point/action 406 is invoked with the database action occurring at step 424 to write the new information to the transactional database 152 and, if successful, the FileOS write action for the data at step 440. If the file write is successful, the evaluation at step 456 as to whether or not the action is a copy read is answered in the negative as is the evaluation of the transaction as to whether or not is a copy transaction executed under the move action at step 468. The resources are then committed, temporary resources are released, and the success indication is returned at step 484.

Consequently, for a copy transaction 402, the loop is first made through the read function 404 and then the write function 406. For the move action at entry point 410, a copy transaction is first executed with the two-loop operation as set forth previously. Upon completion of the copy action, the delete action 408 is implemented in order to erase the original file and its file data. Upon the third loop through the delete step 408, the transaction is neither a read under the copy command at step 456 nor a copy under the move command at step 468. Consequently, the move function has successfully completed, the system resources are committed at step 480, and a success indicator is returned at step 484.

In Figure 5, an overview of the Java® architecture of the X:Drive system 100 of the present invention is shown. The Java® architecture 500 shown in Figure 5 may generally arise from the client 102. A file action container 504 has certain attributes and operations as do the other beans of the architecture 500. Contained within the file action container 504 are a number of stateful, stateless, and entity beans, as well as other containers having other beans. The file action container 504 contains two stateful beans: a user date stateful bean 506 and a process request stateful bean 508. The user data stateful bean 506 has a user info entity bean 510 and a security stateless bean 512.

The process request stateful bean 508 contains a single container, the XDFile container 520. The XDFile container 520 contains three (3) beans and a container. The three beans of the XDFile container 520 are: a database IO stateful bean 522, a file IO stateful bean 524, and an admin stateful bean 526. The container is a recovery container 530 which contains a recovery IO stateful bean 532, a mount status stateful bean 534, a recovery admin stateful bean 536, and a recovery process stateful bean 538.

As indicated by the nature of the beans carried by the containers, stateful beans generally carry information about the state of the bean, process, or otherwise as useful information for the ends and operations of the X:Drive system 100 of the present invention. Stateless beans generally carry no state information, and entity beans are generally for information or identification only. As Java® beans are objects intended to carry both data and processes in association with one another, it is up to the operations of the X:Drive system 100 of the present invention to selectively and appropriately activate the beans and enable the proper actions to take place. The file action container 504 is shown in alternative representation in Figure 6. In Figure 6, a client 102 issues a user authentication request 602 and an operation request 604. The user authentication request 602 is passed into the user data stateful bean 506 in the file action container 504. The operation request 604 is passed into the process request stateful bean 508. The user information entity bean 510 then transmits information to a user information database 610, as does the security stateless bean 512. The process

BNSDOCID: <WO 01333381A1 IA>

request stateful bean uses a first property file **612** that is loaded upon deployment of the XDFile container **520**. The property file is loaded into the admin stateful bean **526** for use with the OS file system **204**. A Java® transaction server **620** may operate in conjunction with the database **152** as well as the OS file system **204** in order to process the operation request **604**. The second property file **630** may be loaded by the recovery admin stateful bean **536** upon the bean's deployment. The recovery IO stateful bean **532** and the recovery admin stateful bean **536** both transmit information to the recovery queue storage buffer **640**. The mount status bean **534** operates in conjunction with the mount status of the system **650**.

The recovery container **530** is called when once a failed resource begins to recover. Further description of the recovery process is given below. However, Figures 5 and 6 operate in tandem to show linearly (Figure 5) and organically (Figure 6) the structure and operation of the XDFile object **210**.

Figure 7 shows the detail of the XDFile database component. A transaction processor (such as Tuxedo from BEA) works in conjunction with the database transaction object **214** as well as the FileIO object **212** to provide a robust and reliable system. Both the database transaction **214** and the FileIO **212** objects include logic and/or programming to handle situations where database or disk array access cannot be guaranteed. The database.transaction object **214** handles the inherent doubt present in the system by using replicated or repeated clusters of databases. The replication process creates latency or delay, in the system. In order to accommodate this latency, the database transaction object **214** uses a session object (a data construct representing a user session on the X:Drive system **100**) to determine if the user's request can be transferred, or replicated, from one database cluster to another, in case of future system failure.

An important aspect with respect to the reliable operation of the X:Drive system **100** is the need to separate databases into functional groups. While the query database may be optimized for quick and small queries and while a transaction database might be optimized for fewer, larger, more time consuming updates, the database layer **236** in the X:Drive system **100** allows for associating SQL commands with different database clusters based on functionality. Additionally, the X:Drive database layer **236** is configured for consolidation and addition of databases on the fly.

As shown in Figure 7, the SQL command **710** is issued and passed to a SQL command evaluator **712**. A SQL evaluator determines the SQL type so that the SQL can be sent to the appropriate database type (that is, in the X:Drive system **100**, the transaction database **150**, the query database **152**, or both).

Upon determining the database type of the SQL statement **712**, the database preference is evaluated at step **714** to determine if the user should be sent back to the same database. If the user is not to be sent back to the same database, the database currently bearing the least load is found in step **716**, and query is then made in step **718** to ensure that the selected least-loaded database is still up, running, and available. If it is, a specification regarding the pooling of database resources is created **720** and transmitted to the database object **236**. Database object **236** then takes the SQL command and passes it to the appropriate database, either the transaction database **150** or the query database **152** via associated connecting pools **730**.

If at step **718** the least loaded database is not available, an alternative database must be used and query is made at step **736** to determine whether or not the alternate database is up. If the alternate database is not up and the evaluation step **736** fails, additional databases may be queried or, as indicated in Figure 7, a fatal error may be generated at step **738**. If the alternate database is up, a pool specification **720** is generated and passed to the database object so that the SQL command may be implemented upon the transactional **152** databases via the connection pools **730**.

If at step **714** the user must be sent back to the same database, query is made at step **740** to determine if that database is still up. If it is, the request is passed to the pool specification **720** where it is subsequently passed to the database object **236**, on to the connection pool **730**, and the appropriate database, either the transaction database **150** or

INSDOCID: <WO_____0133381A1_IA>

the query database **152**. If the same database is not up and the evaluation at step **740** fails, an alternative database must be used, but the SQL request is queried at step **744** to determine if the SQL command is transferable to the alternate database. If not, a fatal error occurs at step **746**. If the SQL command is transferable, query is made at step **750** to see if the alternate database is up and active. Should the evaluation fail, subsequent databases may also be queried if the SQL command is transferable. However, as shown in Figure 7, if the second database is unavailable, a fatal error may be generated at **746**. Otherwise, the database is up, and the evaluation at step at **750** is successful and the command is made available to the database object **236** via the pool specification standard **720** and on to the databases through the connection pools **730**.

In order to ensure proper operation of the XDFile database object **210**, a database status monitor **760** persistently and on-goingly queries the databases **150, 152**. The status is then returned to a database status object **762**. the database status object may provide information to the recovery container **530** of the XDFile object **210**.

The recovery mechanism for the X:Drive system **100** of the present invention is shown in Figure 8. The FileIO object **212** uses a recovery object such as the recovery container **530** to handle write transactions **406** (as opposed to read transactions **404**) when the transaction processor **214** fails. The recovery object is transparent to the user, making it easier and more convenient for the user to use the X:Drive system **100** while decreasing the concern that such a user would have in case of a power outage or other failure in one part of the X:Drive system **100**.

The FileIO object **212** reports an error to the user, but informs the user that her request was stored in the X:Drive system **100** and that the X:Drive system **100** will try to apply the change as soon as possible. If the storage unit, represented as a mounting point in the EJB cluster becomes unavailable for write transactions **406**, the monitoring client **760** updates the EJB network **124** that the status of the mounting point is "down." Once the mounting point is available and checked for data integrity, the status is updated from "down" to "recovery" and the recovery object **530** is called to apply all queued requests for the file action container **504**. This keeps the user from catastrophically losing uploads and other file writes, but may cause some delay in file reads.

In the recovery system **800** of the present invention, the multi-connected pooled database object, the recovery-enabled FileIO object **212**, and the transaction processor **146** work together to create a resource layer offering high availability, recovery, and scalability. Additionally, this resource layer (encapsulated in the XDFile EJB **210**) lends itself to replication of the data, both geographically and locally. Such replication preferably has the three essential traits of being off-site, application-driven, and accessible. With this level of controlled replication, secondary X:Drive clusters are enabled in geographically diverse locations in order to enhance the reliability of the X:Drive system **100**. Consequently, data loss from one data center or even the physical loss of an entire data center would not cause loss of customer data or access. Re-direction would occur dynamically and this information would be replicated in a plurality of sites across the X:Drive system **100**, the query or metadata databases provide multiple pointers to the user's data.

In the recovery system **800** of Figure 8, the recovery system is initially initiated when the MPS Bean **534** is set for a mode to detect mount point recovery at step **804**. At step **804**, a recover method is called and the external mount point is checked. Query is made at step **806** to evaluate whether or not recovery is already occurring. If recovery is already occurring, an exception is thrown at step **808** and exit is made at this finish point. If recovery is not already occurring, a list of mount points in recovery mode is generated in step **810**. Additionally, at step **812** a list of mount points which are down is also generated. Query is made at the evaluation step **818** as to the presence of available recovery objects in the recovery queue. If no such objects are available in the queue, the disk or other database is set into the "up" mode at step **820**. The queue for that disk is then unlocked in step **822**, and the recovery process is complete at step **824**. If at evaluation step **818** recovery objects are still in the queue, evaluation is made as to whether or not the system has gone

BNSDOCID: <WO 0133381A1 IA>

past the lock count at step 830. If so, the queue for the disk in recovery is locked at step 832 for both the lock count evaluation 830 and the queue lock 832 step, control is then directed to the evaluation step as to whether or not the target file exists 834. If the target file does not exist and the evaluation at step 834 fails, the recovery object is removed from the queue at step 840. The status of the recovery is subsequently put in the request for alert queue at step 842 and return is then made to the query step 818 to determine whether or not objects are still available for recovery in the queue.

If the target file does exist when evaluated at step 834, evaluation is made as to whether or not the request is more current than the file at step 850. If the request is older than the current file, the recovery object is removed from the queue at step 840, and the status for the request is put in the request or alert queue 842 and control returns back to the evaluation step 818 to see if any further recovery objects are available in the recovery queue.

If, in evaluating the request, it is found that the request is more current than the file, the request is submitted to the XDFile object 210 at step 852. The submission of the request to the XDFile object 210 is not recoverable. If the submitted request is successful as indicated by the evaluation at step 854, the recovery object is removed from the queue at step 840, its status is put into the request for alert queue at step 842 and evaluation is made at step 818 as to the presence of any additional recovery objects in the recovery queue. However, if in submitting the request to the XDFile object 210 at step 852 the submission fails, query is made at step 860 as to whether or not the mount point has gone down. If at step 860 the mount point is still up, the request from this mount point is ignored at step 862 and the queue for the disk is unlocked at step 864. Control of the program is then returned to the recovery object availability query in evaluation step 818.

As shown in Figure 9, the mount point status bean 534 has UP, DOWN, and RECOVERY states. This bean is applicable to the file database 150, as well as user disks 970, 972 as well as recovery disks 974, 976. Additionally, the recovery admin stateful bean 536 is directed towards the recovery database 980 in order to effect the recovery process 800.

In order to effect virus scanning and repair features, the X:Drive system 100 preferably uses the Java® JNI (Java Native Interface) to access a Norton Anti-Virus or other dynamically linked library (NAV.DLL) to scan files for viruses via a Java® servlet. The Java® servlet runs on a Windows™ version X server and can use JNI to make calls to the NAV.DLL dynamically linked libraries. In effect, the Windows™ X machine becomes a specialized NAV.DLL server located at the EJB network layer 124 of the X:Drive system 100, on a sub-network of the resource network. The logic integrating the NAV.DLL dynamic linked libraries with all X:Drive file writes is shown schematically in the flow diagram in Figure 10.

As shown in Figure 10, the virus scanning sub-system 1000 takes the file/transaction ID 1002 and a transaction ID 1004 from a user 1006. The file/transaction ID 1002 is passed to a file write process 1008 executed by a SUN® or other web server 1010. The file is written to both the database generically indicated at reference 1020 and to a temporary file storage area 1022. The file write process 1008 passes the file transaction ID to the Norton Anti-Virus (NAV) process 1024. Within the NAV process 1024 is NAV scanner 1026. The NAV scanner monitors the data stream or otherwise to determine and detect the presence of any viruses. If upon evaluation the NAV process 1024 detects a virus at evaluation step 1028, data sink action is taken with respect to the database 1020. If no virus is detected, the sequence moves to its final termination at step 1030 and data sink action is taken with respect to a temporary file on medium 1032.

While both the file and transaction ID 1002 are delivered to the file write process 1008, the transaction ID alone 1004 is transmitted to a fetch location info step 1040 on a SUN® or other web server 1010. The fetch location info step 1040 transmits its results to an evaluation step 1042, which determines whether or not the file is in the temporary storage area 1022. If the file is in the temporary area, the file's upload status is shown in step 1044. If the file is not in the

SDOCID: <WO_____0133381A1_IA>

temporary medium **1022**, virus information is fetched at step **1050** in the file status process **1036**.

Once the virus information has been fetched, it is evaluated as to whether or not there is a virus present at step **1052**. If there is no virus detected, then the virus evaluation terminates and a display of same may be made at step **1054**.

However, if evaluation step **1052** indicates the presence of one or more viruses, a plurality of virus options may be shown and presented to the user at step **1060**. Among the virus options available are: the cleaning of the virus at step **1062**, moving the virus to a different location at step **1064**, and/or deleting the virus in step **1066**. If step **1064** is taken with the move of the virus-laden file despite its infectious nature is made, movement of the file with its final destination is made in step **1070**.

As shown in Figure 10, a number of data sink actions are taken with respect to information. Additionally, as indicated by Figure 10, the NAV process **1024** is a separate entity and may be considered to be a JAVA® servlet/daemon living on specialized Windows® NT or other servers.

In order to make resources available on an on-going basis to the virus scanning sub-system **1000** of the present invention, a chron file **1074** (a file executing commands on a periodic basis according to the time) is used to remove old files from a first temporary storage resource **1002**.

Figure 11 shows the Skip the Download/Save to My Xdrive system where a file on the Internet can be transferred over to an individual's X:Drive at generally data speeds far faster than those available to the end user. This allows the user to exercise dominion and control over the file without having to bear the burden of downloading it to the local computer at the present moment. Once the transfer has taken place across the Internet from the host to the X:Drive system **100**, then the user may download the file stored in his X:Drive directory to his local computer at his convenience.

As X:Drive exists on the Internet network, transferring a file from one network resource (such as a web or FTP server) to the user's X:Drive is made much faster from the user's standpoint by by-passing the local connection to the user and allowing the user to submit the transfer request directly to the X:Drive network for execution. The X:Drive system **100** then downloads the requested data from the target server to the user's X:Drive over the presumably higher speed connections of the public Internet.

As shown in Figure 11, the Save to My Xdrive system **1100** first has the user **1110** submit the URL at step **1112**. In order to access the X:Drive system **100** of the present invention, the user submits the URL as well as his or her user name and password at step **1114**. Upon submitting the URL and the appropriate verification information, evaluation is made of the information for authentication purposes at step **1116**. If the evaluation fails and authentication is not achieved, a login form is displayed in conjunction with the previously-indicated URL at step **1118**. If the request is authenticated, it is submitted to the STD/STMX (Skip the Download/Save to My Xdrive) queue **1132** at step **1130**. A status process is then spawned at step **1134**.

Save to My Xdrive status is then checked on an on-going basis by using the queue in the temporary storage area at step **1136**. Query is made as to whether or not the transfer is complete at step **1140**. If the transfer is complete at step **1140**, then the successful completion is indicated to the user at step **1142**. However, if the transfer is not complete, query is made as to the presence of any transfer errors at step **1146**. If an error has occurred, an error message is displayed to the user at step **1148**. However, if the transfer is incomplete but no errors have occurred, the same is then displayed to the user at step **1150**, and a short pause is taken at step **1152** for re-invoking the check STD process at step **1136**.

Once the STD queue **1132** receives the request, a daemon process processes the request from the STD queue at step **1160**. Query is made as to the business logic of the queued request at step **1162**. If the request fails the business logic check **1162**, the status is updated at step **1164**. Control may transfer back to the STD queue **1132**.

If the business logic check succeeds at step **1162**, the URL site is contacted by the X:Drive system **100** at step

RNSDOCID: <WO 0133381A1 IA>

1170 and the download process is activated. The data transmitted by the URL is then saved in temporary X:Drive space in step 1172, with the data being transferred then to the user data space at step 1174. The URL site 1180 may exist anywhere on the Internet so long as it is available to the X:Drive system 100. In a similar manner, a temporary storage space 1182 may also exist anywhere on the Internet so long as it is accessible and controllable by the X:Drive system 100.

Upon transferring data to the user's data space as shown in step 1174, query is made as to the success of the transfer at step 1188. For either success or failure of the successful file transfer at evaluation step 1188, the status is updated at step 1164 and is passed on to the STD queue 1132 until either success or an error is finally achieved. The status process spawned at step 1130 monitors the update status generated by step 1164 and displays the status to the user during and after the download of the file from the Internet to the user's X:Drive system.

Figure 12 shows a schematic and flowchart diagram for the client system generally used under Microsoft® Windows™ for achieving the present invention. The X:Drive system offers its clients two basic services: a file access service by which files can be uploaded and downloaded to and from X:Drive, as well as a file manipulation service from which file metadata can be obtained and manipulated. Both of these services rely upon the context of their usage. For example, the web client of the present invention uses native upload and download features as well as dialogs in the user's web browsers to facilitate the service.

With the use of the web browsers on the local machine, Windows® X clients use the Windows™ TCP/IP stacks inherently present with the Windows® version X operating system. All the file transfers effected by the X:Drive system can take place as HTTP POST/GET or, preferably, Web-DAV transfers. Generally, two basic layers are present in the file manipulation servers of the X:Drive system 100 of the present invention. An XML parser operates in conjunction with an XML data displayer. By coordinating the two basic layers of the file manipulation service, the server is able to respond with generally the same XML code to all clients. The client is then responsible for converting the XML to a relevant data structure and displaying the XML in an appropriate context. In the present invention, the JavaScript web client receives the XML code and parses it into a JavaScript data structure. A display layer in association with the client and/or browser renders the data structure as an HTML document. The Windows® X client parses the same XML code, but the display layer renders the data structure into a device listing that is understood by the Windows® version X operating system. The importance of this layered architecture is that it generally makes trivial the creation of new clients. Instead of simply creating dynamic web pages (and thus limiting service to web browsers alone), the X:Drive system 100 can enable many platforms, such as operating systems, without altering the server structure. Most platforms come with some sort of XML parsing layers, and many platforms come with display layers ready made. Consequently, the time to market may generally be considered low and efficient establishment and implementation of the X:Drive system 100 of the present invention can be achieved fairly quickly. Additionally, expansion into new platforms generally becomes much quicker as no alteration of the server structure generally needs to occur as Java® and related program functionalities are highly portable from one system to another.

In the client system 1200, as shown in Figure 12, the client 102 has a file access service 1202, including a request processing layer 1204 coupled to a network I/O layer 1206. Commands and data are then transmitted to the server side of the X:Drive system 100 where the server side request processing layer 1210 transmits the data to a query evaluating whether or not the request is one for metadata at step 1212. If the evaluation fails and the request is not one for metadata, the network I/O layer 1216 and the resource access layer 1218 are invoked in order to provide access to and operation of the transaction database 152.

If the request for metadata query at step 1212 succeeds, the request is passed on to the resource access layer 1218

SDOCID: <WO_____0133381A1_IA>

and on to the XML generation layer **1220**. The response to the request from the metadatabase **150** is transmitted to the file manipulation service system **1230** of the client **120**. The XML transmitted by the XML generation layer **1220** is received by the file manipulation service **1230** as well as its XML handler **1232**. The XML is then passed on to the XML parser layer at step **1234** to arrive at a data structure **1236** that is then ready for display and so is passed on to the data display layer **1238** for display to the user who may then re-initiate the process by implementing the file access service **1202**.

Figure 13 shows the X:Drive system **100** as implemented on a Windows™ X machine, in this case, a Windows '98 machine (an Intel-based personal computer running the Microsoft Windows '98 operating system).

The second frontmost window **1310** of Figure 13 is headed by the inscription "My Computer" and shows the presence of a drive at logical letter X: **1312** with the X:Drive logo and the label www.xdrive.com (X:). This is an example of the user interface provided by the client application. The X:Drive system is transparent to the user and functions as any other drive present on the system.

If the user were to click on or activate the X:\ drive on the My Computer window **1310**, the second window **1320** appears (partially obscuring the "My Computer" window **1310**) and shows the listing under the X:\ Drive. The address of the window **1320** shows the location of the directory as being at X:\ **1322**.

Also shown in Figure 13 is the desktop icon **1330**, the start menu icon **1336**, and the system tray icon **1340**. These icons accompany the client program **102** and provide greater functionality for the user. Each icon serves to activate the client program in accordance with user-settable preferences.

Figure 13 also shows the web-based application **1350** in the background, behind the My Computer **1310** and X:\ **1320** windows. The web-based application window **1350** is shown in Figure 14. Note should be taken of the exact correspondence between the directory structures of web-based application window **1350** and the client-based application window **1320**. This correspondence provides the user with a uniform, familiar, and dependable interface upon with the user can rely.

As set forth above, the three accompanying Appendices are incorporated herein in their entirety, as is the previously filed provisional application.

While the present invention has been described with regards to particular embodiments, it is recognized that additional variations of the present invention may be devised without departing from the inventive concept.

INDUSTRIAL APPLICABILITY

It is an object of the present invention to provide a Shared Internet Storage Resource on which users may store and retrieve files to make them available to themselves, or possibly others, throughout the Internet.

It is an additional object of the present invention to provide all manner of file access and control generally available to files local to the users for such Internet-stored files.

It is an additional object of the present invention to provide an easy-to-use and readily understood user interface through which files may be stored, retrieved, and manipulated on the Internet.

It is an additional object of the present invention to gather metadata regarding such files and to store such metadata in a database.

It is yet another object of the present invention to provide a plurality of means by which Internet-stored files may be manipulated and controlled.

It is yet another object of the present invention to provide a browser-based access to Internet-stored files.

It is yet another object of the present invention to provide stand-alone application access to Internet-stored files.

RNSDOCID: <WO 0133381A1 IA>

It is yet another object of the present invention to provide means by which Internet files may be stored on an Internet resource by a direct Internet-to-Internet transfer subject to the control of a remote or limited-resource user.

These and other objects, advantages, and the industrial utility of the present invention will be apparent from a review of the accompanying specification and drawings.

ISDOCID: <WO_____0133381A1_IA>

Web Site/Server Code

###addspace.cgi 1
###client_info.cgi 9
###cookie.cgi 12
###download_client.cgi 19
###email_change.cgi 21
###error.cgi 23
###explorer.cgi 24
###explorer_user_data.cgi 28
###file_load.cgi 30
###file_save.cgi 34
#! file_upload_stat.cgi 36
###folder_create.cgi 42
###forgot_password.cgi 44
###forgot_username.cgi 47
###frame_generic.cgi 50
###get_a_shared_file.cgi 52
###get_a_shared_file_download.cgi 54
###login.cgi 57
###logout.cgi 65
###navbar.cgi 66
###password_change.cgi 68
###promo.cgi 71
###removespace.cgi 74
###selected_delete.cgi 79
###selected_rename.cgi 80
###settings_save.cgi 82
###share_a_file.cgi 85
###signup_account.cgi 91
###signup_form.cgi 105
###signup_success.cgi 111
###signup_toc.cgi 113
###skip_the_download.cgi 115
###skip_the_download_status.cgi 122
###tell_a_friend.cgi 131
###web_unauthorized.cgi 135

###addspace.cgi

```
#!/usr/bin/perl
##############################################################################3
##  addspace.cgi - processes additional space requests using Epoch's
##  do_approval library function
##  written by Karen Eppinger
##############################################################################3

use lib ($ENV{PERL_XDRIVE_LIB});

use XDrive::Error;
use XDrive::DatabaseO;
use XDrive::DatabaseO::Table::Deal;
use XDrive::DatabaseO::Table::Item;
use XDrive::DatabaseO::Table::UserData;
use XDrive::DatabaseO::Table::DiskAccount;
use XDrive::Client::Actions;
use XDrive::Client::Quota;
use XDrive::Sale::Purchase;
use Mail::Sendmail;
use CGI::Carp qw(fatalsToBrowser);
use CGI;
use XDrive::Template;
use XDrive::CGI qw(:MAIN);
use XDrive::Client::Security;
use XDrive::CGI::Cookie;
use EpochClient_ssl;

use strict;

$ENV{'PATH'} = '/bin';
delete @ENV{qw(IFS CDPATH ENV BASH_ENV)};    # Make %ENV safer

&main();


##############################################################################
## main: main function calls all others
##
##
##############################################################################

sub main
{
      ##the hash that will be filled in and send to the Epoch function
      my %hData;

      my $oCGI = CGI->new();
      my $oErrors = new XDrive::Error;
      my $oDBH = XDrive::DatabaseO->new();

      my $oCookie = XDrive::CGI::Cookie->new('x_session_info', $oCGI);

      ####
      ## Validate the user and if an error happens during
      ## the validation process die redirect to the error cgi
      ####
      my $oToken = xd_security_check($oDBH,$oCGI,$oErrors);

      if ($oErrors->Occurud)
```


INSDOCID: <WO 0133381A1 IA>

```
            {
            xd_fatal_error($oCGI,$oErrors);
            }

      $hData{'ipaddr'} = $oCGI->remote_addr();

      if ($hData{'ipaddr'}=~/^192.168.2/)
      {
            $hData{'ipaddr'}='0.0.0.0';
      }

      my $sUserName = $oToken->data('user');
      # my $sPartnerCode = $oToken->data('partner_code');
      my $sPartnerCode = $oCookie->getElement('partner');
      my $oTemplate = new XDrive::Template
            ({
            'partner_code' => $sPartnerCode
            });

      ##used to figure whether to give user the form or process the form
      my $sAction = $oCGI->param("action");

      ## if the action is a request type, we give the user the form
      if ($sAction eq 'process')
      {
            ##get the date from the form already pre-screened by javascript
            my $returnValue = GetFormData(\%hData,$sUserName,$oCGI,$oDBH);
            if ($returnValue)
            {
                  ##call the Epoch function that processes the transaction
                  my $sReturnCode = do_approval(%hData);

                  ##if we've been approved $return will contain a number that
is
                  ##7 characters and starts with a Y followed by 7 digits
                  ##only change user's quota if approved
                  ##else let them know there was a problem; all problems
start with N
                  ##return code could be logged in our database to track
tranactions

                  ##truncate expressions longer than 32 characters
                  if (length($sReturnCode)>32)
                  {
                  $sReturnCode = substr($sReturnCode,0,32);
                  }

                  if ($sReturnCode=~m/^Y/)
                  {
                        ##if transaction went through, give them more space
                        ##and show them the ok screen
                        my $error =
&WriteToPurchaseDatabase($sReturnCode,\%hData,$sUserName,$oDBH);
                        if ($error)
                        {
                              &TransactionOK($sReturnCode,
\%hData,$sUserName,$oTemplate,$oDBH,$oToken,$oCGI,$oErrors);
                              $oDBH->commit();
                        }
                        else
                        {
                              ##error inserting into the database
                              &TransactionBad('141',$oTemplate,$oErrors);
```

```
                        $oDBH->rollback();
                    }
                }
                elsif ($sReturnCode=~m/^N/)
                {
                    ##tell them there was a problem
                    ##for some reason we get this returned with
                    $sReturnCode=~s/~//;
                    my $error =
&WriteToFailedDatabase($sReturnCode,\%hData,$sUserName,$oDBH);
                    &TransactionBad($sReturnCode,$oTemplate,$oErrors);
                    $oDBH->commit();
                }
                else
                {
                    ##There was a problem connecting to server
                    my $error =
&WriteToFailedDatabase('COULDNOTCONNECT\n',\%hData,$sUserName,$oDBH);

    &TransactionBad('COULDNOTCONNECT\n',$oTemplate,$oErrors);
                    $oDBH->commit();
                }
            }
            else
            {
                ##this is someone trying to use the
                ##bogus card numbers and isn't one of us
                ##don't bother writing to database because
                ##it is caught before going to Epoch
                &TransactionBad('NMYBADCARD\n',$oTemplate,$oErrors);
            }
            $oDBH->disconnect();
        }
        elsif ($sAction eq 'intro')
        {

        &ShowIntroPage($oTemplate,$sPartnerCode,$sUserName,$oToken,$oCGI,$oErro
rs);
        }
        else
        {
            &ShowForm($oTemplate,$sUserName,$oErrors);
        }
        exit;
}

##############################################################################
## GetFormData:  Fills in the hash that is required by Epoch's function
## Fill in one field at a time because not all fields on the page should go
## into hash plus a few fields don't come from form
##############################################################################

sub GetFormData(\%,$,$,$)
{
    my $hData = shift;
    my $sUserName =shift;
    my $oCGI = shift;
    my $oDBH = shift;

    my $value = 1;

    ##these are mandatory to process the tranaction
    ##javascript checks insure users fill the fields with the proper data
```


SDOCID: <WO_____0133381A1_IA>

```
	$hData->{'transtype'}='approve';
	$hData->{'co_code'}='xdr';
	$hData->{'pi_code'}= $oCGI->param("pi_code");
	$hData->{'cardnum'}= $oCGI->param("cardnum");
	$hData->{'cardexp'}=$oCGI->param("cardexp");

	##someone is trying to access from a site other than ours and use the
free credit card
	if (($hData->{'cardnum'} eq '4121371122223333') || ($hData->{'cardnum'}
eq '4111111111111114'))
	{
		if ($hData->{'ipaddr'} ne '0.0.0.0')
		{
			$value=0;
		}
	}

	##not required but used to check for fraud
	$hData->{'cardname'}= $oCGI->param("cardname");
	$hData->{'street'}=$oCGI->param("address");
	$hData->{'city'}=$oCGI->param("city");
	$hData->{'state'}=$oCGI->param("state");
	$hData->{'zip'}=$oCGI->param("zip");
	$hData->{'phone'}=$oCGI->param("phone");

	##get email out of the database
	my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount-
>new(undef,$oDBH);
	$oDiskAccount->loadWhere('USERNAME',$sUserName);
	my $sUserSeq = $oDiskAccount->fetchColumn('USER_SEQ');
	$oDiskAccount->finish();

	my $oUserInfo = XDrive::DatabaseO::Table::UserData->new(undef,$oDBH);
	$oUserInfo->loadWhere('SEQ',$sUserSeq);
	$hData->{'email'}=$oUserInfo->fetchColumn('EMAIL_ADDRESS');
	$oUserInfo->finish();

	return $value;
}

###############################################################################
## ShowIntroPage: called to show the intro page
##
###############################################################################

sub ShowIntroPage($,$,$)
{
	my $oTemplate = shift;
	my $sPartnerCode = shift;
	my $sUserName = shift;
	my $oToken = shift;
	my $oCGI = shift;
	my $oErr = shift;

	my ($nUserSeq, $oUserData);

	my $oAction = new XDrive::Client::Actions($oToken,$oCGI);
	  my $quotaAvailable = $oAction->QuotaFree();
	  $quotaAvailable = sprintf("%2.2f",$quotaAvailable/1024);

	  my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount-
>new(undef,undef);
	  $oDiskAccount->loadWhere('USERNAME', $sUserName);
```


PNSDOCID: <WO 01333381A1 IA>

```
        my $nUserSeq = $oDiskAccount->fetchColumn("USER_SEQ");

        my $oSearch = XDrive::DatabaseO::Search->new($oDiskAccount-
  >fetchDBO());
        my $items = $oSearch->XDGetItemsForSale($nUserSeq);

        my $itemString='';
        my $i;
        for $i(0..$#{$items})
        {
              ##now using the code, get the description for the item in the
              ##proper language.  This is kept in List.pm
              my $code = "EPOCH_$items->[$i][1]";
              my $description = $oErr->ReturnMessageGivenCode($code);
              $itemString .= "<LI>$description";
        }

        ## Load the required template HTML files.
        $oTemplate->load('addspace_intro.thtml');
        $oTemplate->tags
          ({
          'products' => $itemString,
          'quota' => $quotaAvailable
          });
        $oTemplate->clear;

        print "Content-type: text/html\n\n";
        print $oTemplate->get();
}


##############################################################################
## ShowForm: called to show the user the blank form
##
##############################################################################

sub ShowForm($,$)
{
      my $oTemplate = shift;
      my $sUserName = shift;
      my $oErr = shift;

      my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount-
>new(undef,undef);
        $oDiskAccount->loadWhere('USERNAME', $sUserName);
      my $nUserSeq = $oDiskAccount->fetchColumn("USER_SEQ");


      my $oSearch = XDrive::DatabaseO::Search->new($oDiskAccount-
>fetchDBO());
      my $items = $oSearch->XDGetItemsForSale($nUserSeq);
      my $oDeal = XDrive::DatabaseO::Table::Deal->new(undef, $oDiskAccount-
>fetchDBO());

      my $itemString='';
      my $i;
      for $i(0..$#{$items})
      {
            $oDeal->loadWhere("ITEM_SEQ", $items->[$i][0]);
            my $pi_code = $oDeal->fetchColumn("PRODUCT_CODE");
            my $code = "EPOCH_$items->[$i][1]";
            my $description = $oErr->ReturnMessageGivenCode($code);
```


SDOCID: <WO_____0133381A1_IA>

```
            if ($i == 0)
            {
            $itemString .= '<input type="radio" name="pi_code" value="' .
$pi_code . '" CHECKED>' . $description . '<BR>';
            }
            else
            {
            $itemString .= '<input type="radio" name="pi_code" value="' .
$pi_code . '">' . $description . '<BR>';
            }
      }

      $oDeal->disconnect();

      ## Load the required template HTML files.
      $oTemplate->load('addspace_request.thtml');
      $oTemplate->tags
        ((
        'products' => $itemString
        ));
      $oTemplate->clear;

      print "Content-type: text/html\n\n";
      print $oTemplate->get();
}

##############################################################################
## WriteToFailedDatabase:  if the transaction fails write it to the failed
## _transactions table
##############################################################################

sub WriteToFailedDatabase($,\%,$,$)
{
      my $sTransCode = shift;
      my $hDash = shift;
      my $sUserName = shift;
      my $oDBH = shift;

      my %transInfo;
      ##write transaction info into database
      my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount-
>new(undef,$oDBH);
      $oDiskAccount->loadWhere('USERNAME', $sUserName);

      $transInfo{'user_seq'} = $oDiskAccount->fetchColumn('USER_SEQ');
      $oDiskAccount->finish();
      $transInfo{'trans_code'} = $sTransCode;
      $transInfo{'product_code'} = $hDash->{'pi_code'};
      $transInfo{'IP'} = $hDash->{'ipaddr'};

      my $intoDB = XDrive::Sale::Purchase->new($oDBH);
      my $error = $intoDB->FailedTransaction(\%transInfo);

      return $error;
}

##############################################################################
## WriteToPurchaseDatabase:  write the user transaction info to th
user_purchase
## table
##############################################################################

sub WriteToPurchaseDatabase($,\%,$,$)
```

```
{
        my $sTransCode = shift;
        my $hDash = shift;
        my $sUserName = shift;
        my $oDBH = shift;

        my %transInfo;
        ##write transaction info into database
        my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount-
>new(undef,$oDBH);
        $oDiskAccount->loadWhere('USERNAME', $sUserName);

        $transInfo{'user_seq'} = $oDiskAccount->fetchColumn('USER_SEQ');
        $transInfo{'account_seq'} = $oDiskAccount->fetchColumn('USER_SEQ');
        $oDiskAccount->finish();
        $transInfo{'trans_code'} = $sTransCode;
        $transInfo{'product_code'} = $hDash->{'pi_code'};

        my $intoDB = XDrive::Sale::Purchase->new($oDBH);
        my $error = $intoDB->Checkout(\%transInfo);
        return $error;
}

##############################################################################
## TransactionOK:  if the tranaction was processed and ok'ed, we add the
proper space to the
## user's xdrive and let them know the space has been added
##############################################################################

sub TransactionOK($,\%,$,$)
{
       my $sTransCode = shift;
       my $hDash = shift;
       my $sUserName = shift;
       my $oTemplate = shift;
       my $oDBH = shift;
       my $oToken = shift;
       my $oCGI = shift;
       my $oErr = shift;

       my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount-
>new(undef,$oDBH);
       $oDiskAccount->loadWhere('USERNAME', $sUserName);
       my $userSeq= $oDiskAccount->fetchColumn('USER_SEQ');

       my @aCodes=split(/\|/, $sTransCode);
       $aCodes[1]=~s/~//;
       my $sNewQuota;
       my $sAddedSpace;

       my $oDeal = XDrive::DatabaseO::Table::Deal->new(undef,$oDBH);
         $oDeal->loadWhere('PRODUCT_CODE', $hDash->{'pi_code'});
         my $itemSeq = $oDeal->fetchColumn('ITEM_SEQ');
         my $oItem = XDrive::DatabaseO::Table::Item->new(undef,$oDeal-
>fetchDBO());
         $oItem->loadWhere('SEQ', $itemSeq);
         my $sCode = "EPOCH_" . $oItem->fetchColumn('CODE');
      my $sDescription = $oErr->ReturnMessageGivenCode($sCode);

         my $sSpaceToAdd = $oItem->fetchColumn('NAME');

      my $oAction = new XDrive::Client::Actions($oToken,$oCGI);
      $sNewQuota = $sSpaceToAdd + $oAction->QuotaLimit();
```


NSDOCID: <WO_____0133381A1_IA>

```
        ##now set the new quota
        ##in the database and in the ncftpd database
        ##used during testing to reset occasionally
        ##$sNewQuota = 25600;
        XDQuotaLimit($sUserName, $sNewQuota);

        ##insert into the spool to update ftp account

        ## Load the required template HTML files.
        $oTemplate->load('addspace_ok.thtml');
        $oTemplate->tags
          ({
          'transactionCode' => $aCodes[1],
          'addedSpace' => $sDescription
          });
        $oTemplate->clear;
        print "Content-type: text/html\n\n";
        print $oTemplate->get();
}

##############################################################################
## TransactionBad:  If we get an error code beginning with and N, it's a
declined tranaction
## get the error code and give user the bad tranaction page with error code
##############################################################################

sub TransactionBad($,$)
{
        my $sTransCode = shift;
        my $oTemplate = shift;
        my $oErrors   = shift;

        if ($sTransCode!~/^\d+$/)
        {
              ##error codes contains
              $sTransCode="EPOCH_" . $sTransCode;
              chop($sTransCode);
        }

        ##$oErrors->AddErrorByErrorCode($sTransCode);

        $oErrors->AddErrorByCodeIncludes($sTransCode);
        my $sReturnError=$oErrors->Message($sTransCode);

        if(!$sReturnError)
        {
              $sReturnError = "The was an problem processing your transaction.
Please try again.";
        }

        ## Load the required template HTML files.
        $oTemplate->load('addspace_bad.thtml');
        $oTemplate->tags
          ({
          'error' => $sReturnError
          });
        $oTemplate->clear;
        print "Content-type: text/html\n\n";
        print $oTemplate->get();
}
```

###client_info.cgi

```
#!/usr/bin/perl

use lib ($ENV{PERL_XDRIVE_LIB});
use CGI;

exit &main;

sub main ()
{
      my $oCGI = CGI->new();

      ##get this info from Michael Ryan's or Gavin's client
      my $sUsername      = $oCGI->param('username');
      my $sClientType    = $oCGI->param('client_type');
      my $sClientVersion = $oCGI->param('client_version');
      my $bFirstTime     = $oCGI->param('first_time');

      ##hash of NT info for current version of client
      ##version 1.0 is 0 in the array of upgrades
      my %infoNT;
      my @featuresNT;
      $infoNT{'current_version'} = '1.0';
      $infoNT{'force_upgrade'} = 0;
      $infoNT{'client_url'} = 'http://www.xdrive.com/download/xdrivent.exe';
      ##holds the first array subscript in which upgrade info is kept
      $infoNT{'1.0'} = 0;
      $featuresNT[0][0] = 'beta release';
      ## $featuresNT[0][1] = 'First new feature';
      ## $featuresNT[0][2] = 'Second new feature';

      ##hash of 95 info for current version of client
      ##version 2.03 is 0 in the array of upgrades
      my %info95;
      my @features95;
      $info95{'current_version'} = '2.03';
      $info95{'force_upgrade'} = 0;
      $info95{'client_url'} = 'http://www.xdrive.com/download/xdrive.exe';
      $info95{'2.00'} = 0;
      $info95{'2.01'} = 1;
      $info95{'2.02'} = 2;
      $info95{'2.03'} = 3;
      $info95{'2.04'} = 4;
      $features95[3][0] = 'automatic proxy support.';

      ## examples of other features
      ## $features95[0][1] = '2.03 feature 1';
      ## $features95[0][2] = '2.03 feature 2';
      ## $features95[1][0] = '2.04 feature 1';
      ## $features95[1][1] = '2.04 feature 2';

      my $returnString='';
      my $ref_to_hash;
      my $ref_to_array;

      ##point to hash and array for type of client
      ##this way no need to create separate functions
      if ($sClientType =~ /^xdwin9x/)
        {
            $ref_to_hash=\%info95;
```


ISDOCID: <WO_____0133381A1_IA>

```
            $ref_to_array=\@features95;
      }
      elsif ($sClientType =~ /^xdwinnt/)
      {
            $ref_to_hash=\%infoNT;
            $ref_to_array=\@featuresNT;
      }
      else {}

      if (($sClientType =~ /^xdwin9x/) || ($sClientType =~ /^xdwinnt/))
      {
            ##if the user's version of the client is older than the
            ##current version, ask them to upgrade and tell them
            ##about new features
            my $feature_text='';
            if ($ref_to_hash->{'current_version'} > $sClientVersion)
            {
                  ##get all features from the version 1 above the user's
                  ##to the current version
                  my $array_number_start = $ref_to_hash->{$sClientVersion} +
1;
                  my $array_number_end = $ref_to_hash->{$ref_to_hash-
>{'current_version'}};
                  ##Assemble a big string of new features for
                  ##newer versions than user has
                  my ($i,$j);
                  for $i ($array_number_start .. $array_number_end)
                  {
                        for $j (0 .. $#{$ref_to_array->[$i]})
                        {
                              $feature_text .= "  - ".$ref_to_array->[$i][$j]
. "|";
                        }
                  }
            }

            $returnString = join ("\n",
            "client_version=$ref_to_hash->{'current_version'}",
            "force_upgrade=$ref_to_hash->{'force_upgrade'}",
            "client_url=$ref_to_hash->{'client_url'}",
            "client_text=$feature_text",
            );
      }
      else
      {
            $returnString = join ("\n",
            "client_version=0.0",
            "force_upgrade=-1",
            "client_url=No url. Please contact X:drive",
            "client_text=",
            );
      }

      print $oCGI->header();
      print $returnString;

      ##if ($bFirstTime)
      ##    {
            ## Record the version number
            ## XDClientFirstTimeUse
            ##    (
            ##    $sUsername,
            ##    $sClientType,
```

```
                ##      $sClientVersion
                ##      );
        ##      }
}
```


WSDOCID: <WO 0133381A1 IA>

###cookie.cgi

```
#!/usr/bin/perl
# Written by Martin Hald <mhald@geotribe.com> to verify that the user is
# good to login, if they are then log them in and otherwise redirect to
# a not authorized page.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});
use XDrive::DatabaseO::Table::DiskAccount;
use XDrive::DatabaseO::Table::UserSettings;
use XDrive::DatabaseO::Table::UserQuota;
use XDrive::DatabaseO::Table::Language;
use XDrive::DatabaseO::Search;

use CGI;
use XDrive::CGI::Cookie;
use CGI::Carp qw(fatalsToBrowser);

use XDrive::CGI;
use XDrive::Client::Security;
use XDrive::Error;
use XDrive::Template;
use XDrive::Library;
use XDrive::DatabaseO;
use Mail::Sendmail;

&main;
exit;

sub main
      {
      my $oCGI    = new CGI;
      my $oErr    = new XDrive::Error;
      my $oDBO    = new XDrive::DatabaseO;
      my $oCookie = new XDrive::CGI::Cookie('x_session_info', $oCGI);

      my $oToken;
      my $sToken;
      my $sUsername;
      my $sPartnerCode;

      my $bSecurity = $oCGI->param('bSecurity');
      my $sPartnerToken = $oCGI->param('partner_token');

        my $passed_lang = $oCGI->param('language');

      #####
      ## Attempt to authenticate the user by using one of the following two
      ## authentication methods: username/password pair or partner token
      ## authentication.
      #####
      if (! defined $sUsername && length($sPartnerToken) > 20)
            {
            authPartnerUser($oCGI,$oErr,$oDBO,\$sUsername,\$oToken,
                  \$sPartnerCode,$sPartnerToken);
            $sToken = $oToken->name();
            }
      else
            {
            authWebSiteUser($oCGI,$oErr,$oDBO,\$sUsername,\$oToken);
```

```
        $sPartnerCode = 'xdrv';
        }

    #####
    ## If an error occurud while trying to create a token then redirect
    ## the user to the error page.
    #####
    if ($oErr->Occurud)
        {
        $oDBO->disconnect;
        xd_fatal_error($oCGI,$oErr);
        exit;
        }

    #####
    ## If we have gotten here then we have an authenticated user.
    #####

    #####
    ## Build and print out cookies
    #####
    my $sLanguage = getLanguage($oDBO,$sUsername);


     ##check if user's language is the same as passed language
     if ((length($passed_lang) > 0) && $sLanguage ne $passed_lang)
     {
        ##update db here to new language
        setLanguage($oDBO,$sUsername,$passed_lang);
        ##update session to new language
        $sLanguage = $passed_lang;
     }


##delete the promo cookie;  this will not be set here and we
##don't want an old one hanging out
##promo cookies should be set in promo.cgi
$oCookie->deleteElement('promo') if $oCookie->getElement('promo');

    $oCookie->setElement
        ({
        'language' => $sLanguage,
        'partner' => $sPartnerCode,
        });

    print "Set-Cookie: ". $oCookie->asString();
    print "Set-Cookie: SST=$sToken; domain=.xdrive.com; path=/\n"
        if $sPartnerCode ne 'xdrv';

    #####
    ## write user login to the database
    #####
    &incrementLoginNumber($oDBO,$sUsername,$sLanguage,$sPartnerCode);


    #####
    ## Send the user off into thier file explorer
    #####
    if ($ENV{'HTTP_USER_AGENT'} =~ /^xdwin/)
        {
        print $oCGI->redirect("?sst=".$oToken->name()."&sid=0");
        }
    else
```


SDOCID: <WO_____0133381A1_IA>

```
            {
            xd_web_open($oCGI, "", "", \%ENV, $bSecurity);
            }

      $oDBO->disconnect;
      return 0;
      }

sub incrementLoginNumber()
      {
      my $oDBO = shift;
      my $sUsername = shift;
      my $sLanguage = shift;
      my $sPartnerCode = shift;

      my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount-
>new(undef,$oDBO);
      $oDiskAccount->loadWhere("USERNAME", $sUsername);
      $oDiskAccount->finish;
      my $timesLoggedIn = $oDiskAccount->fetchColumn("LOGIN_NUM");
      my $user_seq = $oDiskAccount->fetchColumn("USER_SEQ");

      if ($timesLoggedIn)
            {
            $timesLoggedIn++;
            }
      else
            {
            $timesLoggedIn=1;
            }

          $oDiskAccount->setColumn("LOGIN_NUM", $timesLoggedIn);
          $oDiskAccount->setColumn("LAST_LOGIN",XDToday());

          my $status = $oDiskAccount->update();

          if ($status > -1)
            {
                  $oDiskAccount->commit();
                  $oDiskAccount->finish();

                  ##give user extra 10MB if 10th login
                  if ($timesLoggedIn == 10)
                  {
                        my $oUserQuota = XDrive::DatabaseO::Table::UserQuota-
>new(undef,$oDBO);
                        $oUserQuota->loadWhere("USER_SEQ", $user_seq);
                        my $additional_quota = $oUserQuota-
>incrementQuota($user_seq,10240);
                        if ($additional_quota > 0)
                        {
                              &send_email($user_seq, $oDBO,
$additional_quota,$sLanguage, $sPartnerCode);
                        }
                  }
            }
          else
            {
            # $oDiskAccount->rollback();
            }

}
```

```
sub send_email
{
      my $user_seq = shift;
        my $oDBO = shift;
      my $additional_quota = shift;
      my $sLanguage = shift;
      my $sPartnerCode = shift;

      ##comes in as k, change to megabytes
      my $mbs = $additional_quota/1024;

        my $oUserData = XDrive::DatabaseO::Table::UserData->new(undef,$oDBO);
        $oUserData->loadWhere("SEQ", $user_seq);
        my $email_address = $oUserData->fetchColumn("EMAIL_ADDRESS");
        my $name_first = $oUserData->fetchColumn("NAME_FIRST");
        my $name_last = $oUserData->fetchColumn("NAME_LAST");

        my $oTemplate =  new XDrive::Template
      ({
        'language'     => $sLanguage,
        'partner_code' => $sPartnerCode,
        });

        $oTemplate->load('received_10MB_10logins.thtml');
      $oTemplate->tags({
            'mbs' => $mbs,
            });
        $oTemplate->clear();
        my $message = $oTemplate->get;

        my %toXdrive =
            (
            To      => "$name_first $name_last <$email_address>",
            Bcc     => '',
            From    => "support\@xdrive.com",
            Message => $message,
            Subject => "Congratulations!"
             );

        sendmail(%toXdrive);
}

sub authPartnerUser
{
     my $oCGI = shift;
     my $oErr = shift;
     my $oDBO = shift;
     my $rsUsername = shift;
     my $roToken = shift;
     my $rsPartnerCode = shift;
     my $sPartnerToken = shift;

     my $oCookie = new XDrive::CGI::Cookie('x_session_info', $oCGI);

     my $oPartnerToken = new Token
           ({
           'err' => $oErr,
           'dbh' => $oDBO,
           });
     $oPartnerToken->load($sPartnerToken);

     return if $oErr->Occurud;
```

```
        $$roToken = new Token
                ({
                'dbh' => $oDBO,
                'err' => $oErr,
                'user_sequence' => $oPartnerToken->data('user_seq'),
                });
        $$roToken->create();

        return if $oErr->Occurud;

        ### Edited by Justin so that the partner_code is looked for
        ### in the cookie instead of the token table.
        $$rsPartnerCode = $oPartnerToken->data('partner_code');
        ##$$rsPartnerCode = $oCookie->getElement('partner');
        $$rsUsername = $oPartnerToken->data('user');

        $$roToken->data('ip',$ENV{REMOTE_ADDR});
        $$roToken->data('browser',$ENV{HTTP_USER_AGENT});
        $$roToken->data('user',$$rsUsername);
        $$roToken->data('user_seq',$oPartnerToken->data('user_seq'));
        $$roToken->data('partner_code',$$rsPartnerCode);
        $$roToken->data('disk_account_seq',$oPartnerToken-
>data('disk_account_seq'));
        $$roToken->save;

        $oPartnerToken->delete();
}

sub authWebSiteUser
        {
        my $oCGI = shift;
        my $oErr = shift;
        my $oDBO = shift;
        my $rsUsername = shift;
        my $roToken = shift;

        my $sPassword = $oCGI->param('pass');
        $$rsUsername = $oCGI->param('user');

        $oCGI->param('user');

        if (xd_auth_password($$rsUsername,$sPassword,$oDBO))
                {
                ## Login the user info X:drive and get the session token
                $$roToken = xd_login($oCGI, $$rsUsername, $oErr, $oDBO);
                }
        else
                {
                $oErr->AddErrorByErrorCode('501');
                }
        }

sub getLanguage
        {
        my $oDBO = shift;
        my $sUsername = shift;

        my $language;

        ## get the user's language out of the database
        my $oDiskAccount =  XDrive::DatabaseO::Table::DiskAccount-
>new(undef,$oDBO);
        $oDiskAccount->loadWhere("USERNAME", $sUsername);
```

```
        $oDiskAccount->finish;
        my $userSeq = $oDiskAccount->fetchColumn("USER_SEQ");

        my $oUserSettings = XDrive::DatabaseO::Table::UserSettings-
>new(undef,$oDBO);
        $oUserSettings->loadWhere("USER_SEQ",$userSeq);
        $oUserSettings->finish;
        my $language = $oUserSettings->fetchColumn("LANGUAGE");

        if ($language eq '')
              {
              $language = 'english';
              }
        else
              {
              ## Get language from database given code
              my $oLanguage = XDrive::DatabaseO::Table::Language-
>new(undef,$oDBO);
              $oLanguage->loadWhere("SEQ",$language);
              $oLanguage->finish;
              $language = $oLanguage->fetchColumn("CODE");
              }

        return $language;
        }


sub setLanguage
{
         ##set the LANGUAGE column of the User_Settings table to passed
language


        my $oDBO = shift;
        my $sUsername = shift;
        my $language = shift;

          my ($rv,$errorCode);

        ## get the user's language out of the database
        my $oDiskAccount =  XDrive::DatabaseO::Table::DiskAccount-
>new(undef,$oDBO);
          ##grab right table
        $oDiskAccount->loadWhere("USERNAME", $sUsername);
        $oDiskAccount->finish;
        my $userSeq = $oDiskAccount->fetchColumn("USER_SEQ");

        my $oUserSettings = XDrive::DatabaseO::Table::UserSettings-
>new(undef,$oDBO);
        $oUserSettings->loadWhere("USER_SEQ",$userSeq);
        $oUserSettings->finish;

          ##grab the seq number of the LANGUAGE being passed
          my $oLanguage = XDrive::DatabaseO::Table::Language->new(undef,$oDBO);
          $oLanguage->loadWhere("CODE",$language);
          $oLanguage->finish();
          my $seq_lang = $oLanguage->fetchColumn("SEQ");

          eval
          {
             ##
             ##set language here
             $rv = 0;
```


NSDOCID: <WO 01333981A1 IA>

```
            $oUserSettings->setColumn('LANGUAGE',$seq_lang);
            $rv = $oUserSettings->update();
        };
        if ($rv == 0)
        {
            $oUserSettings->rollback();
            $errorCode = 0;
        }
        else
        {
            $oUserSettings->commit();
            $errorCode = 1;
        }
        return $errorCode;
}
```

###download_client.cgi

```
#!/usr/bin/perl
## Written by Karen Eppinger
## Script that shows the 'download the client' page
## it can no longer be static html because we need to
## do some checking on whether the user is from a partner or not
## if so, make sure to let them know what their X:drive login name
## is if it differs from their partner login

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use XDrive::Library;
use XDrive::Template;
use XDrive::Error;
use XDrive::DatabaseO;
use XDrive::Client::Security;
use XDrive::DatabaseO::Table::ResellerUserMap;
use XDrive::DatabaseO::Table::Reseller;

&main;
exit;

sub main
      {
      ## Load the session token
      my $oErr    = new XDrive::Error;
      my $oDBO    = new XDrive::DatabaseO;
      my $oCGI    = new CGI;

      my $oToken = xd_security_check($oDBO,$oCGI,$oErr);
      my $oCookie = new XDrive::CGI::Cookie('x_session_info', $oCGI);

      if ($oErr->Occurud)
            {
            xd_fatal_error($oCGI,$oErr);
            $oDBO->disconnect();
            exit;
            }

      my $partner_code = $oToken->data('partner_code');
      my $language     = $oCookie->getElement('language') || 'english';

      my $oForm = new XDrive::Template
            ({
            'partner_code' => $partner_code,
            'language' => $language,
            });

      $oForm->load('download_client.thtml');

      ##if we are coming from a partner, make sure partner login
      ##and X:drive login match

      my $reseller_username;
      my $reseller_name;
      my $partner_warning;
      my $username;
```

```
    if ($partner_code ne 'xdrv')
    {
          my $user_seq = $oToken->data('user_seq');
          $username = $oToken->data('user');

          my $oResellerUserMap = XDrive::DatabaseO::Table::ResellerUserMap-
>new(undef, $oDBO);
          my $oReseller = XDrive::DatabaseO::Table::Reseller->new(undef,
$oDBO);
          $oReseller->loadWhere("CODE", $partner_code);
          $reseller_name = $oReseller->fetchColumn("NAME");
          $oResellerUserMap->loadWhere("USER_SEQ", $user_seq);
          $reseller_username = $oResellerUserMap->fetchColumn("ALIAS");

          if ($reseller_username ne $username)
          {
                ##load the text for the warning message
                my $oWarning = new XDrive::Template
                      ({
                      'partner_code' => $partner_code,
                      'language' => $language,
                      });

                $oWarning->load('download_client_warning.thtml');
                $oWarning->tags
                      ({
                      'reseller_name' => $reseller_name,
                      'reseller_username' => $reseller_username,
                      'username' => $username,
                      });

                $oWarning->clear();
                $partner_warning = $oWarning->get();
          }
    }


    $oForm->tags
          ({
          'partner_warning' => $partner_warning,
          'reseller_name' => $reseller_name,
          'reseller_username' => $reseller_username,
          'username' => $username,
          });

    $oForm->clear();

    print $oCGI->header(), $oForm->get;

    $oDBO->disconnect();

    return 0;
    }
```

###email_change.cgi

```
#!/usr/bin/perl

use lib ($ENV{PERL_XDRIVE_LIB});

use XDrive::Client::Security;
use XDrive::DatabaseO;
use XDrive::DatabaseO::Table::UserData;
use XDrive::DatabaseO::Table::DiskAccount;

use CGI::Carp qw(fatalsToBrowser);
use CGI;
use XDrive::Library;
use XDrive::Template;
use XDrive::Security;
use XDrive::CGI;
use XDrive::Error;

use strict;

&main;
exit;

sub main
{
      my $oCGI = CGI->new();
      my $oErr = new XDrive::Error;
      my $oDBO = new XDrive::DatabaseO;

      ####
      ## Check the token is valid and is an error occured then
      ## redirect with a fatal error
      ####

        my $oToken = xd_security_check($oDBO, $oCGI, $oErr);

      if ($oErr->Occurud)
            {
            xd_fatal_error($oCGI,$oErr);
            exit;
            }

      my $sUserName = $oToken->data('user');
      my $sOldEmail = $oCGI->param('oldEmail');
      my $sNewEmail = $oCGI->param('newEmail');

      if (($sOldEmail eq '') || ($sNewEmail eq ''))
      {
            my $sMessage = $oErr->ReturnMessageGivenCode(1350);
            XDErrorToBrowser("",$sMessage,undef,$oToken);
      }

      ##first, get user_seq from the disk_account table
      ##since we only have the user name, need to do this first
      my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount-
>new(undef,undef);
      $oDiskAccount->loadWhere('USERNAME', $sUserName);
      my $nUserID = $oDiskAccount->fetchColumn('USER_SEQ');

      ##now that we have that, get the email address from
```


NSDOCID: <WO 01333381A1 IA>

```
        ##user table using the user_seq number to pull the seq number
        my $oUserInfo = XDrive::DatabaseO::Table::UserData->new(undef,
$oDiskAccount->fetchDBO());
        $oUserInfo->loadWhere('EMAIL_ADDRESS', $sNewEmail);

        ##if a sequence number is returned, there is already a record
        ##in the database with that email address. don't allow to change

        my $nSeqNumber = $oUserInfo->fetchColumn('SEQ');

        if ($nSeqNumber)
        {
                $oUserInfo->disconnect();
                my $sMessage = $oErr->ReturnMessageGivenCode(1351);
                XDErrorToBrowser("",$sMessage,undef,$oToken);
        }
        else
        {
                $oUserInfo->loadWhere('SEQ', $nUserID);
                my $sEmailinDB = $oUserInfo->fetchColumn('EMAIL_ADDRESS');

                if ($sOldEmail eq $sEmailinDB)
                {
                        ##set email in class
                        $oUserInfo->setColumn('EMAIL_ADDRESS', $sNewEmail);
                        ##now update database
                        $oUserInfo->update();

                        my $oTemplate = new XDrive::Template
                                        ({'partner_code' => $oToken-
>data('partner_code')});
                        $oTemplate->load('pr_changeemail_ok.thtml');
                        print "Content-type: text/html\n\n";
                        print $oTemplate->get();
                }
                else
                {
                        $oUserInfo->disconnect();
                        my $sMessage = $oErr->ReturnMessageGivenCode(1352);
                        XDErrorToBrowser("",$sMessage,undef,$oToken);
                }
        }
        $oUserInfo->commit();
        $oUserInfo->finish();
        $oUserInfo->disconnect();
}
```

###error.cgi

```
#!/usr/bin/perl

use lib ($ENV{PERL_XDRIVE_LIB});
use XDrive::Error;
use XDrive::Template;
use CGI;

&main;
exit;

sub main
{
      my $oCGI = new CGI;
      my ($sErrorCode) =. $ENV{QUERY_STRING} =~ /error=([^\&\=]+)/;
      my $oError = new XDrive::Error;
      my $sError = $oError->ReturnMessageGivenCode($sErrorCode);
      my $oTemplate = new XDrive::Template( {'partner_code' => 'xdrv'} );
      $oTemplate->load('generic_error.thtml');
      $oTemplate->tags
                ({
                'message' => $sError
                });
      $oTemplate->clear();
      print $oCGI->header(), $oTemplate->get;
}
```

###explorer.cgi

```
#!/usr/bin/perl
## Written by Martin Hald <mhald@uci.edu> on Tue May 25 15:23:31 PDT 1999.
## Program to build the file explorer which is itself a popup window.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});
#use vars qw(@ISA);

#@ISA = qw(XDrive::CGI);

use CGI qw(param header);
use CGI::Carp qw(fatalsToBrowser);
use Date::Format;
use HTTP::Icons;
# use XDrive::CGI qw(:MAIN);
use XDrive::Client::Security;
use XDrive::Client::Quota;
use XDrive::Library;
use XDrive::Template;
use XDrive::DatabaseO;
use XDrive::DatabaseO::Table::UserSettings;
use XDrive::DatabaseO::Table::DiskAccount;
use XDrive::DatabaseO::Table::UserData;
use XDrive::Error;

&main;

exit(0);

sub main
      {
      ####
      ## Global variables
      ####
      my $oToken;          ## XDrive Token
      my $sUsername;       ## username
      my $sPath;           ## path for index
      my $sSST;            ## Token name
      my $bEditExt;        ## Allow extensions to be edited?
      my $bFirstTime;      ## First time the've logged in...
      my $bExtraHelp;      ## Print extra help
      my $bMarketing;      ## does user want to receive offers from other
companies
      my $bNewsletter;     ## does user want to receive our newsletter
      my $sPartner;        ## partners name
      my $g_sFrameSize;    ## breakdown of the centerview frame
      my $g_sFrameBanner; ## banner view frame information

      my $oDBO    = XDrive::DatabaseO->new(undef,undef);
      my $oCGI    = new CGI;
      my $oErr    = new XDrive::Error;
      my $oCookie = new XDrive::CGI::Cookie('x_session_info', $oCGI);


      ####
      ## If the user has bookmarked the X:drive service then redirect
      ## them back to the homepage
      ####
```

```
        if (! length($oCGI->param('sst')) && ! length($oCGI->cookie('SST')))
              {
              print $oCGI->redirect('/cgi-bin/web_unauthorized.cgi?error=804');
              $oDBO->disconnect();
              return 0;
              }

        ####
        ## Check the security and if an error occurs
        ####
         $oToken = xd_security_check($oDBO,$oCGI,$oErr);


        if ($oErr->Occurud) {
              $oDBO->disconnect();
              xd_fatal_error($oCGI, $oErr);
              exit;
        }

        ####
        ## Now we know we have a valid session so pull the partner name
        ## from a cookie if available or clear the variable
        ####
        # $sPartner = $oToken->data('partner_code');
        $sPartner = $oCookie->getElement('partner');
        $sPartner = "xdrv" if ($sPartner eq "");

        ## Load the required template HTML files.
        # my $oFrame = new XDrive::Template
        #      ({
        #      'partner_code' => $oToken->data('partner_code')
        #      });

        ### Edited by Justin to check the cookie instead of
        ### the token table for the partner_code.
        my $oFrame = new XDrive::Template
              ({
              'partner_code' => $oCookie->getElement('partner')
              });

        ## If the request comes from the windows app the give back a simplified
template
        $oFrame->load("acct_explorer_frame.thtml");

        ## Assign globally used variables
        $sPath = $oCGI->param('sFolderCurrent');
        $sSST = $oToken->name;
        $sUsername = $oToken->data('user');



        ## User settings
        my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount->new(undef,
$oDBO);


        my $oUserSettings = XDrive::DatabaseO::Table::UserSettings->new(undef,
$oDBO);
        my $oUserData = XDrive::DatabaseO::Table::UserData->new(undef, $oDBO);

        $oDiskAccount->loadWhere("USERNAME", $sUsername);
        $oUserSettings->loadWhere("USER_SEQ", $oDiskAccount-
>fetchColumn("USER_SEQ"));
```


NSDOCID: <WO 013338141 1A>

```
    $oUserData->loadWhere("SEQ", $oDiskAccount->fetchColumn("USER_SEQ"));

    $bEditExt     = $oUserSettings->fetchColumn("FILE_EXT_EDITABLE") == 1 ?
'true' : 'false';
    $bExtraHelp   = ($oUserSettings->fetchColumn("EXTRA_HELP") == 1) ?
'true' : 'false';
    $bMarketing   = $oUserSettings->fetchColumn("OPT_MARKETING") == 1 ?
'true' : 'false';
    $bNewsletter = $oUserSettings->fetchColumn("OPT_NEWSLETTER") == 1 ?
'true' : 'false';

    my $firstName = $oUserData->fetchColumn("NAME_FIRST");
    my $lastName  = $oUserData->fetchColumn("NAME_LAST");

    my $first = $oCGI->param('first');
    $bFirstTime  = $first eq 'yes' ? 'true' : 'false';

    ## Frame settings
    if ($sPartner eq 'cc' || $sPartner eq 'qupa')
        {
        $g_sFrameSize   = '100%';
        $g_sFrameBanner = '';
        }
    else
        {
        $g_sFrameSize   = '103,*';
        $g_sFrameBanner = '<FRAME NAME="banner"'.
              ' SRC="/cgi-bin/ads.cgi" SCROLLING=NO BORDER=0  '.
              ' FRAMEBORDER=0 MARGINWIDTH=0 MARGINHEIGHT=0    '.
              ' TOPMARGIN=0 LEFTMARGIN=0>';
        }

    ##get the language information from the cookie
    ##if no cookie or not set, set to english
    my %session_info = $oCGI->cookie('x_session_info');
    my $language;

    if ($session_info{'language'} ne '') {
        $language = $session_info{'language'};
    }
    else {
        $language = 'english';
    }

    my $clientDownload = $oCGI->param('client');
    my $sCenterPage = 'centerview.thtml';
    if ($clientDownload eq 'getclient') {
        $sCenterPage = 'download_client.thtml';
    }

    ## Set the token name and session ID in the navigation form so that
popup
    ## windows have access to them and the do not need to be passed around.
    $oFrame->tags
        ({
        'sSST' => $sSST,
        'bSettingEditExtensions' => $bEditExt,
        'sPartner' => $sPartner,
        'bExtraHelp' => $bExtraHelp,
        'bFirstTime' => $bFirstTime,
        'bMarketing' => $bMarketing,
        'bNewsletter' => $bNewsletter,
        'centerPage' => $sCenterPage,
```

```
            'userName' => $sUsername,
            'firstName' => $firstName,
            'lastName' => $lastName,
            'frameBanner' => $g_sFrameBanner,
            'frameSize' => $g_sFrameSize,
            'language' => $language
            });

        ## Print out the HTML and exit
        $oFrame->clear();
        print $oCGI->header(), $oFrame->get;

        $oDiskAccount->finish();
        $oUserSettings->finish();
        $oUserData->finish();

        $oDBO->disconnect();
}
```


SDOCID: <WO_____0133381A1_IA>

###explorer_user_data.cgi

```
#!/usr/bin/perl
## Written by Martin Hald <mhald@uci.edu> on Tue May 25 15:23:31 PDT 1999.
## Program to build the file explorer which is itself a popup window.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use vars qw(@ISA);

@ISA = qw(XDrive::CGI);

use Data::Dumper;
use CGI;
use CGI::Carp qw(fatalsToBrowser);
use Token;
use XDrive::CGI qw(:MAIN);
use XDrive::Client::Actions;
use XDrive::Client::Security;
use XDrive::DatabaseO;
use XDrive::Library;
use XDrive::Template;
use XDrive::Error;

&main;
exit;

sub main
      {
      my $oCGI = new CGI;
      my $oErr = new XDrive::Error;
      my $oDBO = new XDrive::DatabaseO;

      my $oToken = xd_security_check($oDBO,$oCGI,$oErr);

      if ($oErr->Occurud)
            {
            xd_fatal_error($oCGI,$oErr);
            exit;
            }

      my $sFolder;
      my $oAction = new XDrive::Client::Actions($oToken,$oCGI);

      $sFolder = $oCGI->param('folder_current');

      ## Load the required template HTML files.
      my $oFrame = new XDrive::Template
            ({
            'partner_code' => $oToken->data('partner_code')
            });

        if ($ENV{'HTTP_USER_AGENT'} =~ /^xdwin/)
              {
              $oFrame->load("acct_user_data_xd_win.thtml");
              }
      else
            {
            $oFrame->load("acct_user_data.thtml");
            }
```

```
      ## Set the token name and sesion ID in the navigation form so that
popup
      ## windows have access to them and the do not need to be passed around.
      $oFrame->tags
            ({
            'sst' => $oAction->SST(),
            'sid' => $oAction->SID(),
            'usage_total' => $oAction->QuotaLimit(),
            'usage_used' => $oAction->QuotaUsed(),
            'stuff' => $oAction->DiskAccountXML($sFolder)
            });
      $oFrame->clear;

      $oAction->DisconnectDB();

      ## Print out the HTML and exit
      print "Cache-Control: no-cache\n";
      print "pragma: no-cache\n";
      print "Content-type: text/html\n\n";
      print $oFrame->get;
      }
```


SDOCID: <WO_____0133381A1_IA>

###file_load.cgi

```
#!/usr/bin/perl
# Program written by Martin Hald <mhald@uci.edu> to fetch files from a
# storage area or database and return them via a HTTP socket to the user.

use strict;
use CGI qw(header param);
use CGI::Carp 'fatalsToBrowser';

## The HTTP::MimeTypes module was a quick module that I wrote that reads the
## standard apache mime.types file, parses it and given any known extension
## translates it to the correct mimetype.

use lib ($ENV{PERL_XDRIVE_LIB});

use HTTP::MimeTypes;
use XDrive::Client::Actions;
use XDrive::Client::Security;
use XDrive::DatabaseO::Table::DiskItemShare;
use XDrive::DatabaseO;
use XDrive::Library;
use XDrive::Error;

## We have two security methods when downloading files:
##   1) tokens
##   2) claim checks
## to deal with this we simply security method we are using and process the
## request.

&main;
exit;

sub main
      {
      my $oCGI = new CGI;
      my $oErr = new XDrive::Error;
      my $oDBO = new XDrive::DatabaseO;

      my $sFileCurrent; ## Current File
      my $oAction;      ## Action object

      ####
      ## Process the request as a share a file pickup if the claim_check
      ## param is available
      ####
      if (param('claim_check'))
            {
            my $oShare;
            $oShare = XDrive::DatabaseO::Table::DiskItemShare->new();
            $oShare->loadWhere("random_key", param('claim_check'));

            $oAction = new XDrive::Client::Actions($oShare,$oCGI);
            $sFileCurrent = join
                  (
                  '/',
                  $oShare->fetchColumn("ITEM_PATH"),
                  $oShare->fetchColumn("ITEM_NAME")
                  );
            }
      ####
```

```
    ## Otherwise it is an request from the browser or PC client
    ## side program so let the actions object handle the request
    ####
    else
          {
          ####
          ## Attempt to authenticate the user and if that fails
          ## then redirect to the error CGI
          ####
          my $oToken = xd_security_check($oDBO, $oCGI, $oErr);


          if ($oErr->Occurud)
                {
                xd_fatal_error($oCGI,$oErr);
                exit;
                }

          ####
          ## Now we know that we have a valid token so go ahead
          ## and let the actions object handle the request
          ####

          $oAction = new XDrive::Client::Actions
                (
                $oToken,
                $oCGI
                );

          $sFileCurrent = $oAction->FileCurrent();
          }

    ## Check that the current file is OK.  If this check fails then
    ## the code does an XDErrorToBrowser and exists
    $oAction->FileCheck($sFileCurrent);

    print _header($sFileCurrent);

    ## Commented out by Justin because it was
    ## including a 1 at the end of the file by printing it out.
    #print $oAction->FileLoad($sFileCurrent);
      $oAction->FileLoad($sFileCurrent);

    $oDBO->disconnect;
    }

sub _header
    {
    my $sFile = shift;
    my $mlt = new HTTP::MimeTypes;

    ## Grab the extension and lookup the correct mimetype using the mlt or
mime
    ## lookup table object.

    my $sHeader;      ## MIME header
    my $sExtension;   ## file extension

    ## Clean up the filename by getting rid of any path that comes before
    ## the filename.
    $sFile =~ s=.*/==g;

    if (param('mime') eq 'download')
```


SDOCID: <WO_____0133381A1_IA>

```
                {
                if ($ENV{HTTP_USER_AGENT} =~ /MSIE/)
                        {
                        $sHeader .= "Content-Disposition: attachment;
    filename=$sFile\n";
                        $sHeader .= "Content-type: application/download;
    name=\"$sFile\"\n\n";
                        }
                else
                        {
                        $sHeader .= "Content-type: application/octet-stream\n\n";
                        }
                }
        else
                {
                my $dotPos=-1;
                my $returnPos=-1;
                while (($dotPos = index($sFile,".", $dotPos)) > -1)
                {
                        $returnPos = $dotPos;
                        $dotPos++;
                }

                ##if no extension set extension to nothing
                if ($returnPos < 0)
                {
                        $sExtension='';
                }
                else
                {
                        $sExtension = substr($sFile,$returnPos+1);
                }

                $mlt->extension($sExtension);
                $sHeader = $mlt->header();
                }

        return $sHeader;
}

sub IEHack ()
        {
        my $sFileCurrent = param('sFileCurrent');
        my ($sFileOnly) = $sFileCurrent =~ /\/([^\/]+)$/;
        my $sJavascript;

        if (param('source') eq 'www.fileExplorer.view' || param('source') eq
'www.fileExplorer.download')
                {
                $sJavascript = <<EOM;
<SCRIPT LANGUAGE=JAVASCRIPT>
if (parent.parent.parent.name)
        {
        parent.parent.parent.parent.XDReset();
        parent.parent.parent.parent.XDRefreshExplorer();
        }
</SCRIPT>
EOM
                }

      print <<EOM;
Content-type: text/html
```


\SDOCID: <WO_____0133381A1_IA>

```
<HTML>
<BODY>

$sJavascript

<OBJECT classid=CLSID:4CCF6192-4552-11D3-80A8-0050048D4BF8
        codebase="http://209.101.43.96/dll/xdfiles.cab"
        id=XDFiles>
</OBJECT>

<SCRIPT LANGUAGE="VBSCRIPT">


' Don't raise errors
On Error Resume Next

Dim oXDFiles              ' The ActiveX control

' Late bind to the control
Set oXDFiles = CreateObject("XDFiles.XDFiles.1")

' If we got an error, they didn't install the ActiveX control
If Err.Number <> 0 Then
      MsgBox "You must install the X:drive ActiveX control in order to
download " & _
             "the file.  Please click Download again and when prompted to
install the " & _
             "ActiveX control, click Yes."
End If

' Set some test values for the properties
oXDFiles.Prompt = True
oXDFiles.Destination = "c:\\$sFileOnly"
oXDFiles.File = "$sFileCurrent"

' Call each method
oXDFiles.Get

' Print out each property
' document.write("oXDFiles.Destination = " & oXDFiles.Destination & "<br>")
' document.write("oXDFiles.Prompt = " & CBool(oXDFiles.Prompt) & "<br>")
' document.write("oXDFiles.File = " & oXDFiles.File & "<br>")
' document.write("oXDFiles.ServerSideToken = " & oXDFiles.ServerSideToken &
"<br>")
' document.write("oXDFiles.SessionId = " & oXDFiles.SessionId & "<br>")

' Free the ActiveX control
Set oXDFiles = Nothing

</SCRIPT>

</BODY>
</HTML>
EOM
      }
```

###file_save.cgi

```
#!/usr/bin/perl

######
### file_save.cgi
######

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});
use CGI::Carp qw(fatalsToBrowser);
use Token;

use XDrive::CGI2;                ## file upload functions
use XDrive::CGI qw(:MAIN);       ## xd_web_buttonindex function
use XDrive::Client::Actions;
use XDrive::Client::Security;
use XDrive::Error;
use XDrive::Library;             ## xd_fatal_error function
use XDrive::DatabaseO;
use XDrive::DatabaseO::Search;
use XDrive::Template;
use XDrive::DatabaseO::Transaction;

&main;

exit;

sub main {
      my $oErr     = new XDrive::Error;
      my $oDBO     = new XDrive::DatabaseO;
      my $oSearch = new XDrive::DatabaseO::Search;

      my $oTransaction = XDrive::DatabaseO::Transaction->new($oDBO);

      ####
      ## Parse the SST cookie manually and retrieve the user sequence
      ## by passing it to the getUserSeq sub.
      ####
      my ($cookie) = $ENV{'HTTP_COOKIE'} =~ /\bSST=(\w+)\b/;
      my $user_seq = &getUserSeq($oSearch, $cookie);

      my $bytes = $ENV{'CONTENT_LENGTH'}; ## number of bytes being uploaded.

      my %upload_hash = ('USER_SEQ' => $user_seq,
                         'BYTES'    => $bytes);
      my $oCGI = new XDrive::CGI2(\%upload_hash, $oTransaction);

      ####
      ## Attempt to authenticate the user and if the authentication
      ## fails then redirect to the error CGI
      ####
      my $oToken = xd_security_check($oDBO, $oCGI, $oErr);

      if ($oErr->Occurud){
            xd_fatal_error($oCGI, $oErr);

            exit;
      }
```


3NSDOCID: <WO____ 0133381A1 IA>

```
    ##########################################################################
####
    ######
    ### Check to see if they've exceeded
    ### their quota limit, and error if so.
    ######
    # my $oUserQuota = XDrive::DatabaseO::Table::UserQuota->new(undef,
$oDBO);
      # $oUserQuota->loadWhere("USER_SEQ", $user_seq);
      # my $nQuota = $oUserQuota->fetchColumn("QUOTA");
      # my $nDiskUsed = $oUserQuota->fetchColumn("DISK_USED");
    # if ( ($nQuota * 1024) < ($nDiskUsed + $bytes) ) {
    #     $oUserQuota->finish();
    #     $oDBO->disconnect();
    #     ## let user know he or she has exceeded his quota
    #     $oErr->AddErrorByErrorCode(1240);
    #     XDErrorToBrowser('action_upload__error.thtml', $oErr, 1,
$oToken);
    #     exit(0);
    # }
    ##########################################################################
####

    ####
    ## Authentication succeeded so we have a valid session, let
    ## the actions object handle the request
    ####
    my $oAction = new XDrive::Client::Actions($oToken, $oCGI);

    $oAction->SaveUploadedFiles();

    ####
    ## File has been uploaded at this point, so set
    ## the upload inactive in the database.
    ####
    $oTransaction->setUploadInactive();

    xd_web_buttonindex($oCGI);
    $oAction->DisconnectDB();

    $oSearch->disconnect();

    return 0;
}

######
### Subroutine:  getUserSeq
### Parameters:  one object, one scalar
### Returns:     one scalar
### Description: Receives a database search object and an SST token.
###              Queries the token table for the user sequence and returns
it.
######
sub getUserSeq ($$) {
  my $oSearch  = shift;
  my $sst_code = shift;

  my $st = "SELECT user_seq FROM token WHERE code = '$sst_code'";

  my $data = $oSearch->XDSQLSearch($st);

  return $$data[0][0];
}
```

#! file_upload_stat.cgi

```
#!/usr/bin/perl

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use XDrive::CGI;
use CGI::Carp qw(fatalsToBrowser);
use XDrive::DatabaseO;
use XDrive::DatabaseO::Search;
use XDrive::Error;
use XDrive::Client::Security;
use XDrive::Template;
use XDrive::Library;
use Token;

&main();

exit(0);

sub main {
   my $oCGI = new CGI;
   my $oDBO = new XDrive::DatabaseO;
   my $oErr = new XDrive::Error;

   ######
   ### Security Check
   ######
   my $oToken = xd_security_check($oDBO, $oCGI, $oErr);
   if ($oErr->Occurud || (! $oToken)) {
      XDErrorToBrowser("", "Security Violation:  No token", undef, $oToken);
   }

   my ($tmp_file, @stat_array, $stat_bytes, $meta_refresh, $percent,
$width_green, $width_red);
   my ($url, $tmp_file_string, @tmp_file_array, $error_code);

   my $tmp_path = XDFileUploadTempDir;

   my $oTemplate = new XDrive::Template( {'partner_code' => 'xdrv',
                                          'file'         =>
'file_upload__status.thtml'} );

   my $id                 = $oCGI->param('id');                ## unique
upload id
   my $nof                = $oCGI->param('nof');               ## number of
files
   my $nof_queried        = $oCGI->param('nof_queried');       ## nof
retrieved from db
   my $file_param         = $oCGI->param('tmp_file');          ## initial file
string
   my $total_file_string = $oCGI->param('total_file_string'); ## string of
all files
   my $param_uploaded     = $oCGI->param('uploaded');          ## bytes
uploaded
   my $bytes              = $oCGI->param('bytes');             ## total number
of bytes

   print $oCGI->header();
```


NSDOCID: <WO 01333381A1 IA>

```
   ######
   ### First, if we're passed an upload id and no temp file params (files to
stat),
   ### then we either haven't queried the database yet and need to or need to
   ### query the database again because the number of files (nof) being
uploaded
   ### is greater than the number of files that our first database query
returned.
   ######

   if ($id && (! $file_param)) {
    . ### If this is the first pass, then percent will be a space and width
will be 0.
      $percent = $bytes ? int(100 * ($param_uploaded / $bytes)) : ' ';
      $width_green = ($percent eq ' ') ? 0 : $percent;
      $percent .= '%' unless $percent eq ' ';

      my $seconds;

      $width_red = &width_red($width_green);

      $oTemplate->tags( {'width_green' => $width_green,
                         'width_red'   => $width_red,
                               'percent'     => $percent});

      my $oSearch = new XDrive::DatabaseO::Search($oDBO);

      my ($cnt, $data) = $oSearch->uploadStatusSearch($id);

      ### If no rows were returned from the database, then redirect
      ### and re-query the database.
      if ($cnt == 0) {
         $oSearch->disconnect();

         $seconds = 0;

         $url = "/cgi-bin/file_upload_stat.cgi?" .
                "id=$id&nof=$nof&bytes=$bytes&uploaded=$param_uploaded";

         $meta_refresh = &buildMetaRefresh($seconds, $url);

         &connectingToServer($meta_refresh, $oTemplate);

         exit(0);
      }
      else {
         my $i = 0;

         $bytes      = $$data[$i][0];
         $error_code = $$data[$i][2];

         foreach (@$data) {
            $tmp_file = $$data[$i][1];

            push @tmp_file_array, $tmp_file;

            $i++;
         }

         $tmp_file_string = join '~', @tmp_file_array;

         if ($cnt == $nof) {
            $oSearch->disconnect();
```

```
            &statFilesTotal($bytes, $tmp_file_string, $oTemplate);

            exit(0);
         }

         $seconds = 0;

         $url  = "/cgi-bin/file_upload_stat.cgi?" .
                 "id=$id&nof=$nof&uploaded=$param_uploaded&" .
                 "nof_queried=$cnt&bytes=$bytes&tmp_file=$tmp_file_string";

         $meta_refresh = &buildMetaRefresh($seconds, $url);

         my $bytes_uploaded = ($param_uploaded > 0) ? $param_uploaded : '-';

         &redirect($meta_refresh, $bytes_uploaded, $bytes, $oTemplate);

         $oSearch->disconnect();

         exit(0);
      }
   }
   elsif ($file_param) {
      $oDBO->disconnect();

      my @file_array = split '~', $file_param;
      my $ary_cnt = @file_array;

      my ($uploaded_bytes, $seconds);

      if (scalar @file_array > 0) {
         foreach (@file_array) {
            @stat_array = stat("$tmp_path/$_");
            $stat_bytes = $stat_array[7];

            $uploaded_bytes += $stat_bytes;
            push @tmp_file_array, $_;
         }
         if ( ($uploaded_bytes == $param_uploaded) && ($nof > $nof_queried) )
{
            $seconds = 0;

            $url = "/cgi-bin/file_upload_stat.cgi?" .
                   "id=$id&nof=$nof&bytes=$bytes&uploaded=$param_uploaded";

            $meta_refresh = &buildMetaRefresh($seconds, $url);

            $percent = ($bytes == 0) ? 0 : int(100 * ($param_uploaded /
$bytes));
            $width_green = $percent;
            $percent .= '%';

            &redirect($meta_refresh, $uploaded_bytes,
                      $bytes, $oTemplate, $percent, $width_green);

            exit(0);
         }
         else {
            $tmp_file_string = join '~', @tmp_file_array;
         }
      }
```

```
      $percent = ($bytes == 0) ? 0 : int(100 * ($uploaded_bytes / $bytes));
      $width_green = $percent;
      $percent .= '%';

      $percent = ' ' if $width_green == 0;

      $seconds = 2;

      $url = "/cgi-bin/file_upload_stat.cgi?" .
             "id=$id&bytes=$bytes&nof=$nof&nof_queried=$nof_queried&" .
             "uploaded=$uploaded_bytes&tmp_file=$tmp_file_string";

      $meta_refresh = &buildMetaRefresh($seconds, $url);

      &redirect($meta_refresh, $uploaded_bytes, $bytes, $oTemplate, $percent,
$width_green);

      exit(0);
   }
   elsif ($total_file_string) {
      $oDBO->disconnect();
      &statFilesTotal($bytes, $total_file_string, $oTemplate);
   }
   else {
      $oDBO->disconnect();

      &closeWindow($oTemplate);

      exit(0);
   }
}

sub statFilesTotal ($$$) {
   my ($bytes, $tmp_file_string, $oTemplate) = @_;

   my $tmp_path = XDFileUploadTempDir;

   my @file_array = split '~', $tmp_file_string;

   my (@tmp_file_array, $uploaded_bytes, @stat_array, $stat_bytes);

   my $file_cnt = 0;

   foreach (@file_array) {
      if (-e "$tmp_path/$_") {
         @stat_array = stat("$tmp_path/$_");
         $stat_bytes = $stat_array[7];

         $uploaded_bytes += $stat_bytes;

         push @tmp_file_array, $_;

         $file_cnt++;
      }
   }

   if ($file_cnt == 0) {
      &closeWindow($oTemplate);

      exit(0);
   }
   else {
      my $percent = int(100 * ($uploaded_bytes / $bytes));
```

```
        my $width_green = $percent;

        $percent .= '%';

        $percent = ' ' if $width_green == 0;

        my $seconds = 2;

        my $url = "/cgi-bin/file_upload_stat.cgi?" .
                  "bytes=$bytes\&total_file_string=$tmp_file_string";

        my $meta_refresh = &buildMetaRefresh($seconds, $url);

        &redirect($meta_refresh, $uploaded_bytes, $bytes, $oTemplate, $percent,
$width_green);

        exit(0);
    }
}

sub redirect ($$$$;$$) {
    my ($meta_refresh, $bytes_uploaded, $bytes, $oTemplate, $percent,
$width_green) = @_;

    if ($bytes > 1024) {
        $bytes  = sprintf "%.f", ($bytes / 1024);
        $bytes .= 'k';
    }

    if ($bytes_uploaded > 1024) {
        $bytes_uploaded  = sprintf "%.f", ($bytes_uploaded / 1024);
        $bytes_uploaded .= 'k';
    }

    my $width_red = &width_red($width_green);

    $oTemplate->tags( {'meta_refresh'   => $meta_refresh,
                       'bytes_uploaded' => $bytes_uploaded,
                       'bytes_total'    => $bytes,
                       'percent'        => $percent,
                       'width_green'    => $width_green,
                  'width_red'      => $width_red} );

    $oTemplate->clear();

    print $oTemplate->get;
}

sub closeWindow ($) {
    my $oTemplate = $_[0];

    $oTemplate->load('file_upload_stat__window_close.thtml');

    print $oTemplate->get;
}

sub connectingToServer ($$) {
    my ($meta_refresh, $oTemplate) = @_;

    $oTemplate->load('file_upload__connecting.thtml');

    $oTemplate->tags( {'meta_refresh' => $meta_refresh} );
```


3NSDOCID: <WO 01333814A1>

```
   print $oTemplate->get;
}

sub buildMetaRefresh ($$) {
   my ($seconds, $url) = @_;

   my $meta_refresh = "<meta http-equiv=refresh content=\"$seconds;
url=$url\">";

   return $meta_refresh;
}


sub width_red {
   my $width_green = shift;
   my $width_red = ((100 - $width_green) > 0)? 100 - $width_green : 0;

   return $width_red;
}
```

###folder_create.cgi

```
#!/usr/bin/perl
# Written by Martin Hald <mhald@uci.edu> on Sat, Jan 30, 1999.

use strict;
use vars qw(@ISA);
use lib ($ENV{PERL_XDRIVE_LIB});
#use lib qw(/export/home/xdrive/lib);

$ENV{'PATH'} = '/bin';
delete @ENV{qw(IFS CDPATH ENV BASH_ENV)};   # Make %ENV safer

@ISA = qw(XDrive::CGI);

use CGI::Carp 'fatalsToBrowser';
use Date::Format;
use Token;
use XDrive::CGI qw(:MAIN);
use XDrive::Client::Security;
use XDrive::Client::Actions;

use CGI;
use XDrive::DatabaseO;
use XDrive::Error;

&main;
exit;

sub main
      {
      my $oCGI = new CGI;
      my $oDBO = new XDrive::DatabaseO;
      my $oErr = new XDrive::Error;

      ####
      ## Attempt to authenticate the user
      ####

      my $oToken = xd_security_check($oDBO,$oCGI,$oErr);

      ####
      ## If the authentication failed then redirect to the
      ## error cgi and exit
      ####

      if ($oErr->Occurud)
            {
            xd_fatal_error($oCGI,$oErr);
            exit;
            }

     ####
     ## Otherwise we know that we have a valid session and
     ## can continue normally
     ####

     my $oAction = new XDrive::Client::Actions
            (
            $oToken,
            $oCGI
```


INSDOCID: <WO 01333381A1 I>

```
        );

    $oAction->FolderCreate();
    xd_web_buttonindex($oCGI);
    $oAction->DisconnectDB();
    return 0;
    }
```

###forgot_password.cgi

```
#!/usr/bin/perl

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI qw(param header);
use CGI::Carp qw(fatalsToBrowser);
use Token;
use XDrive::CGI ();
use XDrive::Template;
use XDrive::Client::Registration;
use XDrive::DatabaseO::Transaction;
use XDrive::DatabaseO::Table::DiskAccount;
use XDrive::DatabaseO::Table::UserData;
use XDrive::DatabaseO::Search;
use XDrive::Library;
use XDrive::Utils::RandomString;

use Mail::Sendmail;

use constant TRUE => (1==1);
use constant FALSE => ! TRUE;

######################
my $request_template = "forgot_password__request.thtml";
my $thank_you_template = "forgot_password__t_y.thtml";
my $alert_template = "forgot_password__alert.thtml";
my $email_template = "password_admin__email.thtml";
######################

exit &main();

sub main {
    my $oCGI = CGI->new();

    my $sEmailAddress = $oCGI->param('txtEmailAddress');
    my $sUsername     = $oCGI->param('txtUsername');

    my $oContent    = new XDrive::Template( {'partner_code' => 'xdrv'} );
    my $oNavigation = new XDrive::Template( {'partner_code' => 'xdrv'} );
    my $oLayout     = new XDrive::Template( {'partner_code' => 'xdrv'} );

    ## Load the required template HTML files.
    $oNavigation->load("front_nav.thtml");
    $oContent->load("front_signup.thtml");
    $oLayout->load("layout.thtml");

    if ( ($sEmailAddress) && ($sUsername) ) {
      ## Change user's password
      my @characters = ('a'..'z','A'..'Z','0'..'9');
      my $sRandomKey = XDRandomString(8,\@characters);
      if(&PasswordSet($oContent,$sUsername, $sEmailAddress, $sRandomKey)) {
          sendMail($oContent,$sUsername, $sRandomKey, $email_template);
      }
      &display_form($oContent,$thank_you_template);

    } else {
      &display_form($oContent,$request_template);
```

```
    }

    ## Print out the HTML and exit
    $oLayout->tags
            ({
            'header_graphic' => 'header_fill.gif',
            'title' => 'What is my password?',
            'content' => $oContent->get,
            'navigation' => $oNavigation->get,
            });
    $oLayout->clear;

    print header,$oLayout->get;
    return 0;
}

sub PasswordSet
{
    my($oContent,$sUsername, $sEmailAddress, $sPassword) = @_;
    my $bReturnValue = 0;
    my $status;
    my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount->new();
    my $oUser = XDrive::DatabaseO::Table::UserData->new(undef, $oDiskAccount-
>fetchDBO());

    $oDiskAccount->loadWhere("USERNAME", $sUsername);
    $oUser->loadWhere("SEQ", $oDiskAccount->fetchColumn("USER_SEQ"));

    if (  (defined $oDiskAccount->fetchColumn("USER_SEQ"))
        &&($oUser->fetchColumn("EMAIL_ADDRESS") eq $sEmailAddress)
        )
    {
      my $sPassEncrypted = XDEncrypt($sPassword);
      $oDiskAccount->setColumn("PASSWORD", $sPassEncrypted);
      $oDiskAccount->update();
      $oDiskAccount->commit();
      $bReturnValue = 1;

    } elsif(  (defined $oDiskAccount->fetchColumn("USER_SEQ"))
            &&($oUser->fetchColumn("EMAIL_ADDRESS") ne $sEmailAddress)
          )
    {
      &sendMail($oContent,$sUsername, "", $alert_template, " NOT");
    }

    $oDiskAccount->finish();
    $oDiskAccount->disconnect();

    return $bReturnValue;

}

sub display_form {
    my ($oContent,$template) = @_;
    $oContent->load($template);
}

sub sendMail {
    my ($oContent,$username, $password, $template, $not) = @_;


    my ($name_first, $name_last, $email_address, $data);
    my $oSearch = XDrive::DatabaseO::Search->new(undef);
```

```
    $data = $oSearch->XDUserInfoByUsername($username);
    $name_first = $data->[0]->[0];
    $name_last = $data->[0]->[1];
    $email_address = $data->[0]->[2];
    $username = $data->[0]->[3];

    my $message = &get_message($oContent,$name_first, $name_last, $username,
$password, $template);

    my %toXdrive =
            (
            To      => "$name_first $name_last <$email_address>",
            Bcc     => '',
            From    => "support\@xdrive.com",
            Message => $message,
            Subject => "X:drive Password$not Updated!"
             );

    sendmail(%toXdrive);
}

sub get_message {
    my ($oContent,$name_first, $name_last, $username, $password, $template) =
@_;

    $name_first = ($name_first)? $name_first : "";
    $name_last = ($name_last)? $name_last : "";

    $oContent->load($template);
    $oContent->tags
      ({
            'name_first' => $name_first,
            'name_last' => $name_last,
            'password' => $password,
            'username' => $username,
       });

    return $oContent->get;
}
```

###forgot_username.cgi

```
#!/usr/bin/perl

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI qw(header param);
use CGI::Carp qw(fatalsToBrowser);
use Mail::Sendmail;

use Token;
# use XDrive::CGI qw(:MAIN);
use XDrive::Template;
use XDrive::DatabaseO::Search;
use XDrive::Library;
use XDrive::Utils::RandomString;

use constant TRUE => (1==1);
use constant FALSE => ! TRUE;

######################
my $invalid_template = "invalid_email.thtml";
my $request_template = "forgot_username__request.thtml";
my $thank_you_template = "forgot_username__t_y.thtml";
my $email_template = "forgot_username__email.thtml";
######################

exit &main();

sub main {
    my $oCGI = CGI->new();

    my $sEmailAddress = $oCGI->param('txtEmailAddress');
    my ($ar_usernames, $length);

    my $oSearch = XDrive::DatabaseO::Search->new(undef);

    my $oContent = new XDrive::Template;
    my $oNavigation = new XDrive::Template;
    my $oLayout = new XDrive::Template;

    $oContent->partner('xdrv');
    $oNavigation->partner('xdrv');
    $oLayout->partner('xdrv');

    ## Load the required template HTML files.
    $oNavigation->load("front_nav.thtml");
    $oLayout->load("layout.thtml");

    ## IF a parameter of email adress has been processed
    ## and in the correct format, then retreive usernames
    ## associated with the email and send them.

if ($sEmailAddress)
{
## * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
## added by kanlaya to check for correct email format
## * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

    if ($sEmailAddress =~ /.*\@.*\./)
```

```
            {

            ## Takes the email_address and returns an array_ref
            ## of all the disk_account.usernames accociated
            ## with that users user.email_address
            $ar_usernames = $oSearch->XDUsernameFromEmail($sEmailAddress);
            $length = @$ar_usernames;

            ## IF there are usernames found for this address,
            ## then email the address the list of usernames.
            if($length > 0)
            {
            &sendMail($ar_usernames, $sEmailAddress, $length);
            }

            $oContent->load($thank_you_template);
            $oContent->tags({'emailAddress' => $sEmailAddress,});

            }
      else
            {$oContent->load($invalid_template);}
## * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
## end add
## * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
}
else
      {$oContent->load($request_template);}

    ## Print out the HTML and exit
    $oLayout->tags
            ({
            'header_graphic' => 'header_fill.gif',
            'title' => 'What is my username?',
            'content' => $oContent->get,
            'navigation' => $oNavigation->get,
            });
    $oLayout->clear;

    print header, $oLayout->get;

    return 0;
}

sub sendMail {
    my ($usernames, $email, $length) = @_;


    my $message = &get_message($usernames, $email, $length);

    my %toXdrive =
            (
            To      => "$email",
            Bcc     => '',
            From    => "support\@xdrive.com",
            Message => $message,
            Subject => "X:drive Username Reminder"
             );

    sendmail(%toXdrive);
}

sub get_message {
    my ($usernames, $email, $length) = @_;
```

```
    my ($sUsername, $sPluralS, $sPluralVerb);
    $sUsername = join("\n", @$usernames);
    $sPluralS = ($length > 1)? "s" : "";
    $sPluralVerb = ($length > 1)? "are" : "is";

    my $oForm = new XDrive::Template;
    $oForm->partner('xdrv');

    $oForm->load($email_template);
    $oForm->tags
      ({
            'sEmailAddress' => $email,
            'sUsername' => $sUsername,
        'sPluralS' => $sPluralS,
        'sPluralVerb' => $sPluralVerb
      });
     $oForm->clear;

    return $oForm->get;
}
```


NSDOCID: <WO_____0133381A1_IA>

###frame_generic.cgi

```
#!/usr/bin/perl
## Written by Matt Clapp on 6/28/99
## This CGI allows us to pass the sst and sid on to the inner frame

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use CGI::Carp qw(fatalsToBrowser);
use Token;
use XDrive::Library;
use XDrive::Template;
use XDrive::Database0;
use XDrive::Error;
use XDrive::Client::Security;
use XDrive::CGI qw(XDErrorToBrowser);
use XDrive::CGI::Cookie;

&main;
exit;

sub main
      {
      my $oCGI = CGI->new();

      my $oCookie = XDrive::CGI::Cookie->new('x_session_info', $oCGI);
      my $language = $oCookie->getElement('language');
      $language = 'english' unless $language;

      my $sThtmlFile   = $oCGI->param('thtml');
      my $sFrameHeight = $oCGI->param('sFrameHeight');

      if ($sFrameHeight == "")
            {
            $sFrameHeight="40";
            }

      if ($sThtmlFile eq 'download_client.thtml')
            {
            my $oTemplate = new XDrive::Template( { 'partner_code' => 'xdrv'}
);
            $oTemplate->load($sThtmlFile);
            $oTemplate->tags( {'sFrameHeight' => $sFrameHeight,
                               'language'     => $language} );
            print "Content-type: text/html\n\n";
            print $oTemplate->get();
            }
     elsif ($sThtmlFile eq 'centerview.thtml')
            {
            my $sFrameSet;
            if ($sFrameHeight > 1)
                  {
                  $sFrameSet = "$sFrameHeight,*";
                  }
            else
                  {
                  $sFrameSet = "100%,*";
                  }
```


NSDOCID: <WO_____0133381A1 IA>

```
            print <<EOM;
Content-type: text/html


<FRAMESET ROWS="$sFrameSet" BORDER=0 FRAMEBORDER=0 MARGINWIDTH=0
MARGINHEIGHT=0 TOPMARGIN=0 LEFTMARGIN=0 frameBorder=0 frameSpacing=0>
EOM

            if ($sFrameHeight > 1)
                  {
                  print <<EOM;
        <FRAME NAME='controls' SRC='/explorer/$language/buttons.html'
SCROLLING=NO MARGINWIDTH=0 MARGINHEIGHT=0 TOPMARGIN=0 LEFTMARGIN=0>
EOM
                  }

            print <<EOM;
        <FRAME NAME='userData' SRC='/cgi-bin/explorer_user_data.cgi'
SCROLLING=AUTO MARGINWIDTH=0 MARGINHEIGHT=0 TOPMARGIN=0 LEFTMARGIN=0>
</FRAMESET>
EOM
            }
      else
            {
            ## Security check.  Since the thtml file is passed in via the URL
the server
            ## can be hacked by passing in ../ offsets to get the directory
the hacker
            ## wants.  A cleaner way would be to pass in a number and use
that number
            ## to access a hash, and die with a security violation if no such
has key
            ## exists.

            my $oDBO = XDrive::DatabaseO->new(undef,undef);
            my $oErr = new XDrive::Error;
            my $oToken = xd_security_check($oDBO,$oCGI,$oErr);

            ####
            ## If the user failed to autenticate or an error occured then
            ## redirect them to the error CGI and exit
            ####

            if ($oErr->Occurud)
                  {
                  xd_fatal_error($oCGI,$oErr);
                  $oDBO->disconnect();
                  }

            warn "#ALERT hacking attempt by ".$oToken->data('user').
                  " from ".$ENV{REMOTE_IP};
            my $sMessage = $oErr->ReturnMessageGivenCode(341);
            XDErrorToBrowser("",$sMessage,undef,$oToken);
            $oDBO->disconnect();
            exit;
            }
}
```

###get_a_shared_file.cgi

```
#!/usr/bin/perl

use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use CGI::Carp qw(fatalsToBrowser);

use XDrive::CGI;
use XDrive::Template;
use XDrive::DatabaseO::Table::DiskItemShare;
use XDrive::DatabaseO::Table::DiskAccount;
use XDrive::DatabaseO::Table::UserData;
use XDrive::DatabaseO::Table::Reseller;
use XDrive::CGI::Cookie;

use strict;

exit &main();

sub main {
      my $cgi = CGI->new();
      my ($ClaimTicket, $oPage, $xdDBH);

      if ($ENV{'QUERY_STRING'} !~ /=/)
            {
            $ClaimTicket = $ENV{'QUERY_STRING'};
            }
      else
            {
            $ClaimTicket = $cgi->param("claim_ticket");
            }

      if (length($ClaimTicket) < 5)
            {
            $ClaimTicket = $ENV{'PATH_INFO'};
            $ClaimTicket =~ s/^\///;
            }

      ##make sure that if claim ticket ends in -SP we set language to spanish
and
      ##truncate claim ticket
      if ($ClaimTicket =~ /-SP$/)
      {
            $ClaimTicket = substr($ClaimTicket,0,length($ClaimTicket)-3);
            my $oCookie = new XDrive::CGI::Cookie('x_session_info', $cgi);
            $oCookie->setElement
                ({
                'language' => 'spanish',
                });

            print "Set-Cookie: ". $oCookie->asString();
      }

      my $oDiskItemShare = XDrive::DatabaseO::Table::DiskItemShare->new();
      $oDiskItemShare->loadWhere("RANDOM_KEY", $ClaimTicket);

      my $diskAccount = $oDiskItemShare-
>fetchColumn("DISK_ACCOUNT_USER_SEQ");
      $xdDBH = $oDiskItemShare->fetchDBO();
```


3NSDOCID: <WO_____0133381A1_IA>

```
      my $oUserAccount = XDrive::DatabaseO::Table::UserData->new(undef,
$xdDBH);
      $oUserAccount->loadWhere("SEQ", $diskAccount);

        my $oReseller = XDrive::DatabaseO::Table::Reseller->new(undef,
$xdDBH);
        $oReseller->loadWhere("SEQ", $oUserAccount-
>fetchColumn("RESELLER_SEQ"));

      my $partner = $oReseller->fetchColumn("CODE");

      ## If the disk item share was not in the database then just use an
xdrive
      ## look n' feel.  NOTE!!!!! This should be changed to a plain looking
      ## error screen.
      $partner = 'xdrv' if ! defined $partner;

      $oPage = new XDrive::Template
            ({
              'partner_code' => $partner
                  });

      $oPage->load('get_a_shared_file__frameset.thtml');
      $oPage->tags
            ({
            'ClaimTicket' => $ClaimTicket,
            'referee' => $diskAccount,
            });
      $oPage->clear();
      print $cgi->header, $oPage->get;

      $oDiskItemShare->disconnect();
      return 0;
      }
```

###get_a_shared_file_download.cgi

```
#!/usr/bin/perl

use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use Data::Dumper;
use XDrive::CGI qw(:MAIN);
use XDrive::Client::Actions;
use XDrive::DatabaseO::Search;
use XDrive::DatabaseO::Table::UserData;
use XDrive::DatabaseO::Table::DiskItemShare;
use XDrive::Template;
use XDrive::Error;

use strict;

&main;
exit;

sub main
      {
      my ($sFileDescription, $sFileSize, $sRandomKey, $sSeq);

      my $cgi = CGI->new();
      my $oErr = new XDrive::Error;
      my $g_oShared;    ## Shared object
      my $g_oSearch;    ## Shared object
      my $g_oAction;    ## Action object
      my $g_oFileStat; ## File stats
      $sRandomKey = $ENV{'QUERY_STRING'};

      if (!$sRandomKey)
            {
            my $sMessage = $oErr->ReturnMessageGivenCode(1360);
                &display_error($sMessage,$oErr);
            }
      else
            {
            ## Instantiate and load the shared object.
            $g_oShared = XDrive::DatabaseO::Table::DiskItemShare->new(undef,
undef);
            $g_oSearch = XDrive::DatabaseO::Search->new($g_oShared-
>fetchDBO());

            $g_oShared->loadWhere("RANDOM_KEY", $sRandomKey);
            $sSeq = $g_oShared->fetchColumn("SEQ");

            if(!$sSeq)
                  {
                  my $sMessage = $oErr->ReturnMessageGivenCode(1361);
                  &display_error($sMessage,$oErr);
                  }

            ## Call the client action constructor with the shared object
            ## which it will use to load all the needed client information.
            $g_oAction = new XDrive::Client::Actions($g_oShared,$cgi);

            my $sFile = join
                        ('/',
```


3NSDOCID: <WO_____0133381A1_IA>

```
                        $g_oShared->fetchColumn("ITEM_PATH"),
                        $g_oShared->fetchColumn("ITEM_NAME")
                        );
            $g_oFileStat = $g_oAction->FileStat($sFile);

            if (!$g_oFileStat) {
                  my $sMessage = $oErr->ReturnMessageGivenCode(1362);
                  &display_error($sMessage,$oErr);
            } else {

                $sFileDescription = $g_oShared->fetchColumn("DESCRIPTION");
                  $sFileSize = ($g_oFileStat->size() > 1024)?
int($g_oFileStat->size()/1024) . "K" :

$g_oFileStat->size() . " bytes";


                  &display_form($g_oShared-
>fetchColumn("ITEM_NAME"),$sRandomKey, $sFileSize,
$sFileDescription,$g_oSearch->XDResellerCodeFromUserSeq($g_oShared-
>fetchColumn("DISK_ACCOUNT_USER_SEQ")));
                  }
            }
            $g_oShared->finish();
            $g_oShared->disconnect();
            $g_oAction->DisconnectDB();
      }


sub display_form
      {
      my ($sFilename,$sRandomKey, $sFileSize, $sFileDescription,$sPartner)
=@_;

      my $oForm = new XDrive::Template;
      $oForm->partner($sPartner);
      $oForm->load('get_a_shared_file__download_screen.thtml');
      $oForm->tags
            ({
            'sFilename' => $sFilename,
            'sExtraPathInfo' => $sFilename,
            'sRandomKey' => $sRandomKey,
            'sFileSize' => $sFileSize,
            'sFileDescription' => $sFileDescription,
            });

      $oForm->clear();
      print "content-type: text/html\n\n", $oForm->get;
      exit(0);
      }

sub display_error
      {
      my ($message,$oErr) = @_;

        if (!$message)
        {
                $message = $oErr->ReturnMessageGivenCode(1363);
        }

        my $oForm = new XDrive::Template;
        $oForm->partner('xdrv');
        $oForm->load('get_a_shared_file__error.thtml');
```

```
        $oForm->tags
        ({
                'message' => $message,
        });
        print "content-type: text/html\n\n", $oForm->get;
        exit(0);
}
```


WSDOCID: <WO_____0133381A1_IA>

###login.cgi

```
#!/usr/bin/perl
# Written by Martin Hald <mhald@geotribe.com> to verify that the user is
# good to login, if they are then log them in and otherwise redirect to
# a not authorized page.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});
use XDrive::DatabaseO::Table::DiskAccount;
use XDrive::DatabaseO::Table::UserSettings;
use XDrive::DatabaseO::Table::UserQuota;
use XDrive::DatabaseO::Table::Language;
use XDrive::DatabaseO::Search;
use CGI qw(param redirect header cookie);
use CGI;
use XDrive::CGI::Cookie;
use CGI::Carp qw(fatalsToBrowser);

use XDrive::CGI;
use XDrive::Client::Security;
use XDrive::Error;
use XDrive::Template;
use XDrive::Library;
use XDrive::DatabaseO;
use Mail::Sendmail;

&main;
exit;

sub main
      {
      my $oCGI    = new CGI;
      my $oErr    = new XDrive::Error;
      ##my $oDBO    = new XDrive::DatabaseO;
      my $oCookie = new XDrive::CGI::Cookie('x_session_info', $oCGI);

      my $oToken;
      my $sToken;
      my $sUsername;
      my $sPartnerCode;
        ## johngaa add for dbexist check
        my $oDBO;

        if (XDDBConnectionCheck() && XDNFSCheck())
        {
           $oDBO = new XDrive::DatabaseO;
        }
        else
        {
           $oDBO = undef;
           print redirect("/upgrading_index.html");
           exit;
        }
        ## end of johngaa change
      my $bSecurity = $oCGI->param('bSecurity');
      my $sPartnerToken = $oCGI->param('partner_token');

        my $passed_lang = $oCGI->param('language');

      #####
```

```
    ## Attempt to authenticate the user by using one of the following two
    ## authentication methods: username/password pair or partner token
    ## authentication.
    #####
    if (! defined $sUsername && length($sPartnerToken) > 20)
          {
          authPartnerUser($oCGI,$oErr,$oDBO,\$sUsername,\$oToken,
                \$sPartnerCode,$sPartnerToken);
          $sToken = $oToken->name();
          }
    else
          {
          authWebSiteUser($oCGI,$oErr,$oDBO,\$sUsername,\$oToken);
          $sPartnerCode = 'xdrv';
          }

    #####
    ## If an error occurud while trying to create a token then redirect
    ## the user to the error page.
    #####
    if ($oErr->Occurud)
          {
          $oDBO->disconnect;
          xd_fatal_error($oCGI,$oErr);
          exit;
          }

    #####
    ## If we have gotten here then we have an authenticated user.
    #####

    #####
    ## Build and print out cookies
    #####
    my $sLanguage = getLanguage($oDBO,$sUsername);


     ##check if user's language is the same as passed language
     if ((length($passed_lang) > 0) && $sLanguage ne $passed_lang)
     {
        ##update db here to new language
        setLanguage($oDBO,$sUsername,$passed_lang);
        ##update session to new language
        $sLanguage = $passed_lang;
     }


##delete the promo cookie;  this will not be set here and we
##don't want an old one hanging out
##promo cookies should be set in promo.cgi
$oCookie->deleteElement('promo') if $oCookie->getElement('promo');

    $oCookie->setElement
          ({
          'language' => $sLanguage,
          'partner' => $sPartnerCode,
          });

    print "Set-Cookie: ". $oCookie->asString();
    print "Set-Cookie: SST=$sToken; domain=.xdrive.com; path=/\n"
          if $sPartnerCode ne 'xdrv';
```


3NSDOCID: <WO_____0133381A1_IA>

```
        #####
        ## write user login to the database
        #####
        &incrementLoginNumber($oDBO,$sUsername,$sLanguage,$sPartnerCode);


        #####
        ## Send the user off into thier file explorer
        #####
        if ($ENV{'HTTP_USER_AGENT'} =~ /^xdwin/)
              {
              print $oCGI->redirect("?sst=".$oToken->name()."&sid=0");
              }
        else
              {
              xd_web_open($oCGI, "", "", \%ENV, $bSecurity);
              }

        $oDBO->disconnect;
        return 0;
        }


sub isYesterday()
{
##
## Date: 01/25/99
## used to check of a date if its today or not
##
         my $last_login = shift;
         my $nSec;                    ## Seconds
         my $nMin;                    ## Minutes
         my $nHour;                   ## Hours
         my $sDay;                    ## Weekday
         my $nDay;                    ## Numeric date (01-31)
         my $nMonth;                  ## Numeric month (01-12)
         my $nYear;                   ## Numeric year (00-99)


         my $todaysDate = ($nSec, $nMin, $nHour, $nDay, $nMonth, $nYear,
$sDay) = (localtime(time))[0,1,2,3,4,5,6];

         $last_login =~ /([\d]+)-([\d]+)-([\d]+)/i;
         my $last_login_year  = int($1);
         my $last_login_month = int($2);
         my $last_login_day   = int($3);

         if ($last_login_year < $nYear)
         {
            return 1;
         }
         if ($last_login_month < $nMonth)
         {
            return 1;
         }
         if ($last_login_day < $nDay)
         {
            return 1;
         }
         return 0;

}
```

```
sub incrementLoginNumber()
      {
      my $oDBO = shift;
      my $sUsername = shift;
      my $sLanguage = shift;
      my $sPartnerCode = shift;

      my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount-
>new(undef,$oDBO);
      $oDiskAccount->loadWhere("USERNAME", $sUsername);
      $oDiskAccount->finish;
      my $timesLoggedIn = $oDiskAccount->fetchColumn("LOGIN_NUM");
      my $user_seq = $oDiskAccount->fetchColumn("USER_SEQ");


        ## johngaa add
        ## insert a warn in the error log if this is the
      if ($ENV{'HTTP_USER_AGENT'} =~ /^xdwin/)
        {
           my $todaysDate = XDToday();
           warn "#client_login user_seq=$user_seq username=$sUsername
date=$todaysDate#";
        }
        ## end of johngaa warn of first entry


     if ($timesLoggedIn)
           {
           $timesLoggedIn++;
           }
     else
           {
           $timesLoggedIn=1;
           }

         $oDiskAccount->setColumn("LOGIN_NUM", $timesLoggedIn);
         $oDiskAccount->setColumn("LAST_LOGIN",XDToday());

         my $status = $oDiskAccount->update();

         if ($status > -1)
           {
                 $oDiskAccount->commit();
                 $oDiskAccount->finish();

                       ## johngaa modify to exclude college club
                       ## and quepasa users out of the extra space
                       ## promo

                       my $oUserData = XDrive::DatabaseO::Table::UserData-
>new(undef,$oDBO);
                       $oUserData->loadWhere("SEQ", $user_seq);
                       my $reseller_seq = $oUserData-
>fetchColumn("RESELLER_SEQ");
                       if (!(isResellerSeqCC_QUPA($oDBO,$reseller_seq)))
                       {
                    ##give user extra 10MB if 10th login
                    if ($timesLoggedIn == 10)
                    {
                       my $oUserQuota = XDrive::DatabaseO::Table::UserQuota-
>new(undef,$oDBO);
```


INSDOCID: <WO_____0133381A1_IA>

```
                        $oUserQuota->loadWhere("USER_SEQ", $user_seq);
                        my $additional_quota = $oUserQuota-
>incrementQuota($user_seq,10240);
                        if ($additional_quota > 0)
                        {
                              &send_email($user_seq, $oDBO,
$additional_quota,$sLanguage, $sPartnerCode);
                        }
                    }
                        }
          }
        else
          {
          # $oDiskAccount->rollback();
          }

}

sub isResellerSeqCC_QUPA
{
   my $oDBO = shift;
   my $reseller_seq = shift;
   my $dbh = $oDBO->fetchDBH();

   my $sql_stmt = "SELECT code FROM reseller WHERE seq=?";
   my $cmd;
   my @data;

   $cmd = $dbh->prepare($sql_stmt);
   $cmd->execute(($reseller_seq));
   @data = $cmd->fetchrow_array;
   if ($data[0] eq 'cc' || $data[0] eq 'qupa')
   {
      return 1;
      ##print "should return  a true\n"
   }
   return 0;
}


sub send_email
{
      my $user_seq = shift;
        my $oDBO = shift;
      my $additional_quota = shift;
      my $sLanguage = shift;
      my $sPartnerCode = shift;

      if ($sPartnerCode eq 'cc')
      {
            return;
      }


      ##comes in as k, change to megabytes
      my $mbs = $additional_quota/1024;

        my $oUserData = XDrive::DatabaseO::Table::UserData->new(undef,$oDBO);
        $oUserData->loadWhere("SEQ", $user_seq);
        my $email_address = $oUserData->fetchColumn("EMAIL_ADDRESS");
        my $name_first = $oUserData->fetchColumn("NAME_FIRST");
        my $name_last = $oUserData->fetchColumn("NAME_LAST");
```

```
        my $oTemplate =  new XDrive::Template
       ({
         'language'      => $sLanguage,
         'partner_code' => $sPartnerCode,
         });

         $oTemplate->load('received_10MB_10logins.thtml');
       $oTemplate->tags({
            'mbs' => $mbs,
            });
         $oTemplate->clear();
         my $message = $oTemplate->get;

         my %toXdrive =
             (
             To       => "$name_first $name_last <$email_address>",
             Bcc      => '',
             From     => "support\@xdrive.com",
             Message => $message,
             Subject => "Congratulations!"
              );

        sendmail(%toXdrive);
}

sub authPartnerUser
{
      my $oCGI = shift;
      my $oErr = shift;
      my $oDBO = shift;
      my $rsUsername = shift;
      my $roToken = shift;
      my $rsPartnerCode = shift;
      my $sPartnerToken = shift;

      my $oCookie = new XDrive::CGI::Cookie('x_session_info', $oCGI);

      my $oPartnerToken = new Token
            ({
            'err' => $oErr,
            'dbh' => $oDBO,
            });
      $oPartnerToken->load($sPartnerToken);

      return if $oErr->Occurud;

      $$roToken = new Token
            ({
            'dbh' => $oDBO,
            'err' => $oErr,
            'user_sequence' => $oPartnerToken->data('user_seq'),
            });
      $$roToken->create();

      return if $oErr->Occurud;

      ### Edited by Justin so that the partner_code is looked for
      ### in the cookie instead of the token table.
      ### And then again because I shouldn't have done that.  The
      ### partner code hasn't been set in the cookie by this point,
      ### so we shouldn't be looking in there for it.
      $$rsPartnerCode = $oPartnerToken->data('partner_code');
      # $$rsPartnerCode = $oCookie->getElement('partner');
```


NSDOCID: <WO_____0133381A1_IA>

```
	$$rsUsername = $oPartnerToken->data('user');

	$$roToken->data('ip',$ENV{REMOTE_ADDR});
	$$roToken->data('browser',$ENV{HTTP_USER_AGENT});
	$$roToken->data('user',$$rsUsername);
	$$roToken->data('user_seq',$oPartnerToken->data('user_seq'));
	$$roToken->data('partner_code',$$rsPartnerCode);
	$$roToken->data('disk_account_seq',$oPartnerToken-
>data('disk_account_seq'));
	$$roToken->save;

	$oPartnerToken->delete();
}

sub authWebSiteUser
	{
	my $oCGI = shift;
	my $oErr = shift;
	my $oDBO = shift;
	my $rsUsername = shift;
	my $roToken = shift;

	my $sPassword = $oCGI->param('pass');
	$$rsUsername = $oCGI->param('user');

	if (xd_auth_password($$rsUsername,$sPassword,$oDBO))
		{
		## Login the user info X:drive and get the session token
		$$roToken = xd_login($oCGI, $$rsUsername, $oErr, $oDBO);
		}
	else
		{
		$oErr->AddErrorByErrorCode('501');
		}
	}

sub getLanguage
	{
	my $oDBO = shift;
	my $sUsername = shift;

	my $language;

	## get the user's language out of the database
	my $oDiskAccount =  XDrive::DatabaseO::Table::DiskAccount-
>new(undef,$oDBO);
	$oDiskAccount->loadWhere("USERNAME", $sUsername);
	$oDiskAccount->finish;
	my $userSeq = $oDiskAccount->fetchColumn("USER_SEQ");

	my $oUserSettings = XDrive::DatabaseO::Table::UserSettings-
>new(undef,$oDBO);
	$oUserSettings->loadWhere("USER_SEQ",$userSeq);
	$oUserSettings->finish;
	my $language = $oUserSettings->fetchColumn("LANGUAGE");

	if ($language eq '')
		{
		$language = 'english';
		}
	else
		{
		## Get language from database given code
```

```
            my $oLanguage = XDrive::DatabaseO::Table::Language-
>new(undef,$oDBO);
            $oLanguage->loadWhere("SEQ",$language);
            $oLanguage->finish;
            $language = $oLanguage->fetchColumn("CODE");
            }

        return $language;
        }


sub setLanguage
{
         ##set the LANGUAGE column of the User_Settings table to passed
language


        my $oDBO = shift;
        my $sUsername = shift;
        my $language = shift;

          my ($rv,$errorCode);

        ## get the user's language out of the database
        my $oDiskAccount =  XDrive::DatabaseO::Table::DiskAccount-
>new(undef,$oDBO);
          ##grab right table
        $oDiskAccount->loadWhere("USERNAME", $sUsername);
        $oDiskAccount->finish;
        my $userSeq = $oDiskAccount->fetchColumn("USER_SEQ");

       my $oUserSettings = XDrive::DatabaseO::Table::UserSettings-
>new(undef,$oDBO);
       $oUserSettings->loadWhere("USER_SEQ",$userSeq);
       $oUserSettings->finish;

         ##grab the seq number of the LANGUAGE being passed
         my $oLanguage = XDrive::DatabaseO::Table::Language->new(undef,$oDBO);
         $oLanguage->loadWhere("CODE",$language);
         $oLanguage->finish();
         my $seq_lang = $oLanguage->fetchColumn("SEQ");

         eval
         {
            ##
            ##set language here
            $rv = 0;
            $oUserSettings->setColumn('LANGUAGE',$seq_lang);
            $rv = $oUserSettings->update();
         };
         if ($rv == 0)
         {
             $oUserSettings->rollback();
             $errorCode = 0;
         }
         else
         {
             $oUserSettings->commit();
             $errorCode = 1;
         }
         return $errorCode;
}
```


INSDOCID: <WO_____0133381A1_IA>

###logout.cgi

```
#!/usr/bin/perl
## Program to log the user out, currently hacked to redirect to the homepage.
## Modified by Justin on 10/15/99 to be Security.pm friendly
## and get rid of the XDrive::CGI stuff.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use CGI::Carp qw(fatalsToBrowser);
use XDrive::Client::Security;
use XDrive::DatabaseO;
use XDrive::Error;

&main;
exit;

sub main
      {
      my $oCGI    = CGI->new();
      my $oDBO    = new XDrive::DatabaseO;
      my $oError = new XDrive::Error;

      ##removes token from the database
      xd_logout($oDBO, $oCGI, $oError);

      $oDBO->disconnect;

      print $oCGI->redirect('/');
      return 0;
      }
```

###navbar.cgi

```
#!/usr/bin/perl
## Written by Martin Hald <martin@xdrive.com> on Sun Sep 5 1999
## Script to dynamically show the correct tempate based on which
## partner is looking at the web site.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use XDrive::Library;
use XDrive::Template;
use XDrive::Error;
use XDrive::DatabaseO;
use XDrive::Client::Security;

&main;
exit;

sub main
      {
      ## Load the session token
      my $oErr     = new XDrive::Error;
      my $oDBO     = new XDrive::DatabaseO;
      my $oCGI     = new CGI;
      my $oCookie = new XDrive::CGI::Cookie('x_session_info', $oCGI);

      ####
      ## Attempt to autenticate the user
      ####

      my $oToken = xd_security_check($oDBO,$oCGI,$oErr);

      ####
      ## If the user does not validate or an error occurud
      ## then redirect to the error CGI and exit
      ####

      if ($oErr->Occurud)
            {
            xd_fatal_error($oCGI,$oErr);

            $oDBO->disconnect();

            exit;
            }

     ####
     ## Otherwise we have validated and should load the navbar
     ## associated with the partner
     ####
     ### Edited by Justin so that partner_code is looked for in
     ### the cookie instead of the token table.
     # my $oForm = new XDrive::Template
     #      ({
     #      'partner_code' => $oToken->data('partner_code')
     #      });

    my $oForm = new XDrive::Template
          ({
```


NSDOCID: <WO_____0133381A1_IA>

```
        'partner_code' => $oCookie->getElement('partner')
        ));

    $oForm->load('navbar.thtml');

    ####
    ## Print the navbar and stop
    ####

    print "Content-type: text/html\n\n";
    print $oForm->get;

    $oDBO->disconnect();

    return 0;
    }
```

###password_change.cgi

```
#!/usr/bin/perl
## Written by Lucas McGregor on ???

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI qw(header param);
use CGI::Carp qw(fatalsToBrowser);

use Token;
use XDrive::DatabaseO;
use XDrive::Error;
use XDrive::CGI qw(:MAIN);
use XDrive::Client::Security;
use XDrive::Client::Registration;
use XDrive::DatabaseO::Transaction;
use XDrive::DatabaseO::Table::DiskAccount;
use XDrive::Library;
use XDrive::Template;

use constant TRUE => (1==1);
use constant FALSE => ! TRUE;

&main;
exit;

sub main
      {
        my $oCGI    = CGI->new();
        my $oDBO    = new XDrive::DatabaseO;
        my $oErr = new XDrive::Error;

      ####
      ## Attempt to autenticate the user
      ####

        my $oToken = xd_security_check($oDBO, $oCGI, $oErr);

      ####
      ## If an error occurs or the user fails to autenticate then redirect
      ## to the error CGI and exit
      ####

     if ($oErr->Occurud)
           {
           xd_fatal_error($oCGI,$oErr);
           exit;
           }

     ####
     ## Otherwise have have autenticated the user and can proceed
     ####

     my $sUsername = $oToken->data('user');

     my $sPasswordNew        = $oCGI->param('txtPasswordNew1');
     my $sPasswordNewConfirm = $oCGI->param('txtPasswordNew2');
     my $sPasswordOld        = $oCGI->param('txtPasswordOld1');
```


BNSDOCID: <WO_____0133381A1_IA>

```
    if (($sPasswordNew eq '') || ($sPasswordNewConfirm eq '') ||
($sPasswordOld eq ''))
            {
            ##if any of the fields is blank, give em error message
            my $sMessage = $oErr->ReturnMessageGivenCode(1340);
            XDErrorToBrowser("",$sMessage,undef,$oToken);
            }

      ## Change user's password
      PasswordSet($sUsername, $sPasswordNew,
$sPasswordOld,$oToken,$oErr,$oCGI);

      return 0;
      }

##############################################################################
## PasswordSet: Change user's password
##############################################################################

sub PasswordSet($$)
      {
      my $sUsername = shift;          ## (I) User in question
      my $sPassword = shift;          ## (I) New password
      my $sPasswordOld = shift;         ## (I) Old password
      my $oToken = shift;               ## (I) Token object
      my $oErr = shift;
      my $oCGI = shift;
      my $sPassEncrypted = XDEncrypt($sPassword);

      my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount->new();
      $oDiskAccount->loadWhere("USERNAME", $sUsername);

      if (! PasswordsMatch($oDiskAccount-
>fetchColumn("PASSWORD"),$sPasswordOld))
            {
            my $sMessage = $oErr->ReturnMessageGivenCode(1341);
            XDErrorToBrowser("",$sMessage,undef,$oToken);
            }

      if (! defined $oDiskAccount->fetchColumn("USER_SEQ"))
            {
            my $sMessage = $oErr->ReturnMessageGivenCode(1342);
            XDErrorToBrowser("",$sMessage,undef,$oToken);
            }

      $oDiskAccount->setColumn("PASSWORD", $sPassEncrypted);
        my $status = $oDiskAccount->update();

      ## If no error, then commit
      ## Else rollback and show an error
      if ($status > -1) {
          $oDiskAccount->commit();
      }
      else
      {
          $oDiskAccount->rollback();
            my $sMessage = $oErr->ReturnMessageGivenCode(1343);
            XDErrorToBrowser("",$sMessage,undef,$oToken);
      }

      $oDiskAccount->finish();
      $oDiskAccount->disconnect();
```

```
    my $oTemplate = new XDrive::Template( {'partner_code' => 'xdrv'} );
      $oTemplate->load('password_changed.thtml');
      print $oCGI->header(), $oTemplate->get;
    }

##############################################################################
## PasswordsMatch: Check an encrypted password against an unencrypted
## password and return true or false.
##############################################################################

sub PasswordsMatch
    {
    my $sEncrypted = shift;  ## current password
    my $sToCheck   = shift;  ## string to check

    ## Encrypt the passed password with the salt from the password taken
    ## from the database.
    my ($sSalt) = $sEncrypted =~ /^(\w{2})/;

    ## Do the passwords match?  If so then return true, otherwise false.
    if ($sEncrypted eq crypt($sToCheck,$sSalt))
            {
       return TRUE;
       }

      return FALSE;
    }
```


INSDOCID: <WO_____0133381A1_IA>

###promo.cgi

```
#!/usr/bin/perl
##
## File: promo.cgi
##
## Written by Justin White on 10/25/99.
## Sets a promo cookie and redirects to the home page.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use XDrive::Template;
use XDrive::DatabaseO;
use XDrive::CGI::Cookie;
use XDrive::DatabaseO::Search;

use CGI;
use CGI::Carp qw(fatalsToBrowser);

&main();

exit;

sub main {
   my ($cookie, $promo, %new_info, $oSearch, $oTemplate);

   my $oCGI    = CGI->new();
   my $oCookie = XDrive::CGI::Cookie->new('x_session_info', $oCGI);

   my $path_info = $ENV{'PATH_INFO'};

   my $sClaimTicket = $oCGI->param('ct');

   if ($sClaimTicket) {
      ##
      # Via cookie, set the promo so that signup_account.cgi treats
      # it as a promo and set the claim ticket code so that we can
      # remove that data from the batch_user_data table.
      ##
      $oCookie->setElement( {'ct' => $sClaimTicket} );
   }

   if ($path_info) {
      $path_info =~ s/^\///;

      $oCookie->setElement( {'promo' => $path_info} );
      $oCookie->setPath('/');

      ##if user is coming from the befree promo, set a cookie with their
      ##source id, be Free requires this for tracking purposes
      if ($path_info =~ /befree/)
      {
            my $sourceid = $oCGI->param('sourceid');
            print "Set-Cookie: sourceid=$sourceid; domain=.xdrive.com;
path=/\n"
      }

      my $oDBO    = XDrive::DatabaseO->new();
      my $oSearch = XDrive::DatabaseO::Search->new($oDBO);
```

```
      my @bind_array = ($path_info);

      # my $st = "SELECT p.template, p.redirect_url, dl.code
      #           FROM xdrive.promo p, xdrive.v_language dl
      #           WHERE p.uri = '$path_info'
      #             AND p.du_language = dl.seq(+)";

      my $st = "SELECT p.template, p.redirect_url, dl.code
                FROM xdrive.promo p, xdrive.v_language dl
                WHERE p.uri = ?
            AND p.du_language = dl.seq(+)";

      # my $data = $oSearch->XDSQLSearch($st);
      my $data = $oSearch->XDSQLSearch($st, \@bind_array);
      my $rows = @{$data};

      if ($rows > 0) {
         my $template     = $$data[0][0];
         my $redirect_url = $$data[0][1];
         my $language     = $$data[0][3];

         $oCookie->setElement( {'language' => $language} );

         print "Set-Cookie: ", $oCookie->asString();

         if ($template) {
            eval {
               $oTemplate = new XDrive::Template( {'cookie'        =>
$oCookie,
                                                   'partner_code' => 'xdrv'}
);
               $oTemplate->partner('xdrv');

               $oTemplate->load("promo/$template");
            };

            if ($@) {
               print $oCGI->redirect('/');
               warn "$@\n";
            }
            else {
               print $oCGI->header(), $oTemplate->get;
            }

            $oSearch->disconnect;

         }
         elsif ($redirect_url) {
            print $oCGI->redirect($redirect_url);

            $oSearch->disconnect;
         }
         else {
            print $oCGI->redirect('/');

            $oSearch->disconnect;
         }
      }
      else {
         print $oCGI->redirect('/');
      }
   }
   else {
```


INSDOCID: <WO_____0133381A1_IA>

```
        print $oCGI->redirect('/');

        $oSearch->disconnect;
    }

    return;
}
```

###removespace.cgi

```
#!/usr/bin/perl
##############################################################################3
##  Written by Karen Eppinger
##  removespace.cgi - cancels additional space requests
##############################################################################3

use lib ($ENV{PERL_XDRIVE_LIB});

use XDrive::Error;
use XDrive::Library;
use XDrive::DatabaseO;
use XDrive::DatabaseO::Table::Reseller;
use XDrive::DatabaseO::Table::Deal;
use XDrive::DatabaseO::Table::Item;
use XDrive::DatabaseO::Table::DiskAccount;
use XDrive::DatabaseO::Table::UserData;
use XDrive::DatabaseO::Table::UserPurchase;
use XDrive::Client::Actions;
use XDrive::DatabaseO::Search;
use XDrive::Sale::Purchase;
use Mail::Sendmail;
use CGI::Carp qw(fatalsToBrowser);
use CGI;
use XDrive::Template;
use XDrive::CGI qw(:MAIN);
use XDrive::Client::Security;
use EpochClient_ssl;

use strict;

$ENV{'PATH'} = '/bin';
delete @ENV{qw(IFS CDPATH ENV BASH_ENV)};   # Make %ENV safer

exit &main;

##############################################################################
## main: main function calls all others
##
##
##############################################################################


sub main
      {
        my $oCGI = CGI->new();
        my $oDBO = new XDrive::DatabaseO;
        my $oErr = new XDrive::Error;

      ####
      ## Attempt to authenticate the user
      ####

        my $oToken = xd_security_check($oDBO, $oCGI, $oErr);

      ####
      ## If an error occurs during autentication or authentication fails
      ## then redirect to the error CGI and exit
      ####
```


NSDOCID: <WO_____0133381A1_IA>

```
    if ($oErr->Occurud)
          {
          xd_fatal_error($oCGI,$oErr);
          exit;
          }

    ####
    ## Otherwise we have a valid session
    ####

    my $sUserName = $oToken->data('user');
    my $oTemplate = new XDrive::Template
          ({
                'partner_code' => $oToken->data('partner_code')
          });

    ## used to figure whether to give user the form or process the form
    my $sAction = $oCGI->param("action");

    ## Create a DBH
    my $oDBH = XDrive::DatabaseO->new();

    ## if the action is a request type
    if ($sAction eq 'process')
    {
          ##else we process the form input
          &CheckSpaceUsed($oCGI,$sUserName,$oTemplate,$oToken,$oDBH,$oErr);
    }
    elsif ($sAction eq 'intro')
    {
          &ShowIntroPage($oTemplate,$sUserName,$oToken,$oCGI);
    }
    else
    {
          ## we give the user the form
          &ShowSpace($sUserName,$oTemplate,$oToken,$oDBH,$oErr);
    }
    $oDBH->disconnect();
    }


##############################################################################
## CheckSpaceUsed:  make sure the user has enough free space for his files
## if not, do not let him cancel
##############################################################################

sub CheckSpaceUsed
{
      my $oCGI = shift;
      my $sUserName = shift;
      my $oTemplate = shift;
      my $oToken = shift;
      my $oDBH = shift;
      my $oErr = shift;

      ##we need to get the number of fields so we know what to process
      my @fields = $oCGI->param;
      my $checked = 0;

      my $returnValue = '';
      ##for each checked item, either cancel or tell user they may not cancel
      ##because space used is larger than space available after cancelation
```

```
        for (my $i=0; $i<$#fields; $i++)
        {
              if ($fields[$i]=~/^tc_/)
              {
              $fields[$i]=~s/^tc_//;
              my $oPurchase = new XDrive::Sale::Purchase($oDBH);
              my @message_dbmessage = $oPurchase->CancelItem($fields[$i],
 $sUserName);
              $returnValue .=$message_dbmessage[0];
              $checked++;

                    if ($message_dbmessage[1] != 0)
                    {
                          $oDBH->commit();
                    }
                    else
                    {
                          $oDBH->rollback();
                    }

              }
        }

        if ($checked>0)
        {
              ##show the page that tells user if space was cancelled or not
              &ShowCanceled($returnValue,$oTemplate);
        }
        else
        {
              ##user hasn't checked anything, give em error page
              my $sError = $oErr->ReturnMessageGivenCode(1301);
              XDErrorToBrowser("", $sError, undef, $oToken);
        }
}


###############################################################################
## ShowCanceled:  tell user space was cancelled
###############################################################################

sub ShowCanceled
      {
      my $sItemsCanceled = shift;
      my $oTemplate      = shift;

      ## Load the required template HTML files.
      $oTemplate->load('removespace_ok.thtml');
      $oTemplate->tags
            ({
            'items' => $sItemsCanceled
            });
      print "Content-type: text/html\n\n";
      print $oTemplate->get();
      }

###############################################################################
## ShowSpace:  shows the user the initial page with their current space
## allocation
###############################################################################

sub ShowSpace
{
```


INSDOCID: <WO_____0133381A1_IA>

```
        my $sUserName = shift;
        my $oTemplate = shift;
        my $oToken = shift;
        my $oDBH = shift;
        my $oErr = shift;

        my $sMessage = $oErr->ReturnMessageGivenCode(1302);
        $sMessage = &GetItems($sUserName,$oToken,$oDBH,$oErr);

        ## Load the required template HTML files.
        $oTemplate->load('removespace_request.thtml');
        $oTemplate->tags
                ({
                'items' => $sMessage
                });

        print "Content-type: text/html\n\n";
        print $oTemplate->get();
}

sub ShowIntroPage
{
        my $oTemplate = shift;
        my $sUserName = shift;
        my $oToken = shift;
        my $oCGI = shift;

        my $oAction = new XDrive::Client::Actions
                (
                $oToken,
                $oCGI
                );
        my $quotaUsed = $oAction->QuotaUsed();
        $quotaUsed = sprintf("%2.2f",$quotaUsed/1024);
        my $quotaLimit = $oAction->QuotaLimit();
        $quotaLimit = sprintf("%2.2f",$quotaLimit/1024);

        $oTemplate->load('removespace_intro.thtml');
        $oTemplate->tags
                ({
                'quotaUsed' => $quotaUsed,
                'quotaLimit' => $quotaLimit
                });
        $oTemplate->clear();

        print "Content-type: text/html\n\n";
        print $oTemplate->get();
}

sub GetItems
{
        my $sUserName = shift;
        my $oToken = shift;
        my $oDBH = shift;
        my $oErr = shift;

        my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount-
>new(undef,$oDBH);
        $oDiskAccount->loadWhere('USERNAME', $sUserName);

        ##now load all items in the user_purchase database that are
        ##owned by this user
        my $userSeq = $oDiskAccount->fetchColumn('USER_SEQ');
```

```
        ##passing a 0 as the last parameter returns all non-canceled items
        my $oSearch = XDrive::DatabaseO::Search->new(undef);
        my $array = $oSearch->XDUserPurchases($userSeq,0);

        ##see if the array returned any items

        if ($array->[0][0] eq '')
        {
              my $sError = $oErr->ReturnMessageGivenCode(1302);
              XDErrorToBrowser('removespace_noitems.thtml', $sError, 1,
$oToken);
        }

        my $i;
        my $items = '';

        for $i(0..$#{$array})
        {
              ##storing the complete string returned by Epoch
              ##must take only stuff after the | to cancel transaction
              ##and chop off last character which seems to be a line return
              ##may have to alter this if we see problems
              chop($array->[$i][4]);
              my @aCodes=split(/\|/, $array->[$i][4]);
              my $itemName = 'tc_' . $aCodes[1];
              $itemName=~s/~//;

              ##Get the name associated with this item
              my $oDeal = XDrive::DatabaseO::Table::Deal->new(undef,$oDBH);
              $oDeal->loadWhere('SEQ',$array->[$i][2]);
              my $itemSeq = $oDeal->fetchColumn('ITEM_SEQ');
              my $oItem = XDrive::DatabaseO::Table::Item->new(undef,$oDBH);
              $oItem->loadWhere('SEQ', $itemSeq);
              my $description = $oItem->fetchColumn('DESCRIPTION');

              $items .= '<input type="checkbox" name="' . $itemName . '">' .
$description . '<BR>';
        }

        if ($items eq '')
        {
              my $sError = $oErr->ReturnMessageGivenCode(1302);
              XDErrorToBrowser('removespace_noitems.thtml', $sError, 1,
$oToken);
        }

        return $items;
}
```


3NSDOCID: <WO_____0133381A1_IA>

###selected_delete.cgi

```
#!/usr/bin/perl
# Written by Martin Hald <mhald@geotribe.com> for renaming files from the
# web.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use CGI::Carp qw(fatalsToBrowser);
use XDrive::CGI qw(:MAIN);
use XDrive::Client::Actions;
use XDrive::Client::Security;

use XDrive::Error;
use XDrive::DatabaseO;

exit &main;

sub main
      {
      my $oCGI = new CGI;
      my $oErr = new XDrive::Error;
      my $oDBO = new XDrive::DatabaseO;

      ####
      ## Attempt to autenticate the user
      ####

      my $oToken = xd_security_check($oDBO,$oCGI,$oErr);

      ####
      ## If an error occured or the user could not be validated then
      ## redirect to the error CGI and exit
      ####

      if ($oErr->Occurud)
            {
            xd_fatal_error($oCGI,$oErr);
            exit;
            }

      ####
      ## Otherwise we know that we have a valid session
      ####

      my $oAction = new XDrive::Client::Actions
            (
            $oToken,
            $oCGI
            );

      $oAction->FileCheck($oAction->ItemCurrent());
      $oAction->ItemDelete($oAction->ItemCurrent());
      xd_web_buttonindex($oCGI);
      $oAction->DisconnectDB();

      return 0;
      }
```


RNSDOCID: <WO 0133381A1 IA>

###selected_rename.cgi

```
#!/usr/bin/perl
# Written by Martin Hald <mhald@geotribe.com> for renaming files from the
# web.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use CGI::Carp 'fatalsToBrowser';
use XDrive::CGI qw(:MAIN);
use XDrive::Client::Actions;
use XDrive::Client::Security;

use XDrive::Library;
use XDrive::DatabaseO;
use XDrive::Error;

## Clean up the path
$ENV{'PATH'} = '/bin';
delete @ENV{qw(IFS CDPATH ENV BASH_ENV)};   # Make %ENV safer

exit &main;

sub main {
        my $oCGI = new CGI;
        my $oErr = new XDrive::Error;
        my $oDBO = new XDrive::DatabaseO;

       ####
       ## Attempt to autenticate the user
       ####

       my $oToken = xd_security_check($oDBO,$oCGI,$oErr);

       ####
       ## If the autentication fails or there is an error during the
       ## autentication phase then redirect to the error CGI
       ####

       if ($oErr->Occurud)
             {
             xd_fatal_error($oCGI,$oErr);
             exit;
             }

      ####
      ## Otherwise we have a valid session
      ####

        my $oAction = new XDrive::Client::Actions
            (
            $oToken,
            $oCGI
                );

        my $sItemOld = $oAction->ItemCurrent();

        ## Get the relative path to the item to be renamed from the
        ## old item name itself.
```


NSDOCID: <WO_____0133381A1 IA>

```
        my ($sFolder) = $sItemOld =~ /(.+\/)[^\/]+/;

        ## Set the new item to be in that folder.
        my $sItemNew = $sFolder.$oAction->ItemNew().$oAction-
>ItemExtension();

      $oAction->FileCheck($sItemOld);
        $oAction->ItemRename($sItemOld,$sItemNew);

        xd_web_buttonindex($oCGI);
        $oAction->DisconnectDB();
}
```

###settings_save.cgi

```
#!/usr/bin/perl

use strict;
use vars qw(@ISA);
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use CGI::Carp qw(fatalsToBrowser);
use Data::Dumper;
use XDrive::Library;
use XDrive::CGI;
use XDrive::Client::Quota;
use XDrive::Client::Security;
use XDrive::CGI::Cookie;
use XDrive::DatabaseO::Table::UserSettings;
use XDrive::DatabaseO::Table::Language;
use XDrive::DatabaseO;
use XDrive::Error;
use XDrive::Template;

@ISA = qw(XDrive::CGI);

exit &main;

sub main {
        my $oCGI = CGI->new();
        my $oDBO = new XDrive::DatabaseO;
        my $oErr = new XDrive::Error;

        ####
        ## Attempt to autenticate the user
        ####

        my $oToken = xd_security_check($oDBO,$oCGI,$oErr);

        ####
        ## If the autentication fails or there is an error during the
        ## autentication phase then redirect to the error CGI
        ####

        if ($oErr->Occurud)
                {
                xd_fatal_error($oCGI,$oErr);
                exit;
                }

        ####
        ## Otherwise we have a valid session
        ####

     my $oCookie = XDrive::CGI::Cookie->new('x_session_info', $oCGI);
     my $sUser = $oToken->data('user');
     my $nUser = UserIdGet($sUser);

     my $oUserSettings = XDrive::DatabaseO::Table::UserSettings->new(undef,
undef);

     ## Initialize global variables
     my $g_bFileExtEdit = $oCGI->param('bFileExtEdit') eq 'on' ? 1 : 0;
```


3NSDOCID: <WO_____0133381A1_IA>

```
    my $g_bExtraHelp    = $oCGI->param('bExtraHelp') eq 'on' ? 1 : 0;
    my $g_bMarketing    = $oCGI->param('bMarketing') eq 'on' ? 1 : 0;
    my $g_bNewsletter   = $oCGI->param('bNewsletter') eq 'on' ? 1 : 0;
    my $g_bLanguage     = $oCGI->param('bLanguage');
    my $sCurrentLanguage;

    my $languageCode;

    if (defined $g_bLanguage)
          {
          my $oLanguage = XDrive::DatabaseO::Table::Language->new
                (undef, $oUserSettings->fetchDBO());
          $oLanguage->loadWhere("CODE", $g_bLanguage);
          $languageCode = $oLanguage->fetchColumn("SEQ");
          }

    ## We are doing this in a backwards way -- first we will try and load
the
    ## current users profile.  If that works then we change it and update
it
    ## by calling save.  If that does not work then we just call save.

    $oUserSettings->loadWhere("USER_SEQ", $nUser);
    $oUserSettings->setColumn("FILE_EXT_EDITABLE", $g_bFileExtEdit);
    $oUserSettings->setColumn("EXTRA_HELP", $g_bExtraHelp);
    $oUserSettings->setColumn("OPT_MARKETING", $g_bMarketing);
    $oUserSettings->setColumn("OPT_NEWSLETTER", $g_bNewsletter);

    ## The language element is an OPTIONAL setting in the "My Profile"
area.
    ## If it is passed then set it, otherwise leave the current value.
    if (defined $g_bLanguage)
    {
        $sCurrentLanguage = $g_bLanguage;
        $oUserSettings->setColumn("LANGUAGE", $languageCode);
    }
      else
    {
        $sCurrentLanguage = "english";
    }

    my $status = $oUserSettings->update();

    if ($status < 0)
    {
        $oUserSettings->rollback();
          my $sMessage = $oErr->ReturnMessageGivenCode(1330);
        XDErrorToBrowser(undef, $sMessage, undef, $oToken)
    }
    else
    {
          $oUserSettings->commit();

          if (defined $g_bLanguage)
                {
                ##set the cookie for language
                $oCookie->setElement
                      ({
                      'language' => $g_bLanguage
                      });
                print "Set-Cookie: ", $oCookie->asString();
                }
    }
```

```
    ## Redirect the browser to the succesfull save page.

    ### Edited by Justin so that we get the partner_code out
    ### of cookie instead of the token table.
    # print xd_web_redirect
    #     (
    #     "/account/profile/$sCurrentLanguage/saved.html",
    #     $oToken->data('partner_code')
    #     );

    print xd_web_redirect
            (
            "/account/profile/$sCurrentLanguage/saved.html",
            $oCookie->getElement('partner')
            );

    $oUserSettings->finish();
    $oUserSettings->disconnect();
    $oDBO->disconnect();
}
```


3NSDOCID: <WO_____0133381A1_IA>

###share_a_file.cgi

```
#!/usr/bin/perl

use lib ($ENV{PERL_XDRIVE_LIB});

use XDrive::Client::Quota;
use Math::TrulyRandom;
use XDrive::DatabaseO;
use XDrive::DatabaseO::Search;
use XDrive::DatabaseO::Transaction;
use XDrive::DatabaseO::Table::UserData;
use XDrive::Utils::RandomString;
use XDrive::CGI;

use Mail::Sendmail;
use CGI::Carp qw(fatalsToBrowser);
use CGI;
use XDrive::Template;
use XDrive::Client::Security;
use XDrive::Error;
use XDrive::Library;
use XDrive::CGI::Cookie;

use strict;

&main();

sub main {
      my $cgi = CGI->new();
      my $oErr = new XDrive::Error;
      my $xdDBH = XDrive::DatabaseO->new();

      my $oCookie = new XDrive::CGI::Cookie('x_session_info', $cgi);

        ####
        ## Attempt to autenticate the user
        ####

      my $oToken = xd_security_check($xdDBH,$cgi,$oErr);

        ####
        ## If the autentication fails or there is an error during the
        ## autentication phase then redirect to the error CGI
        ####

        if ($oErr->Occurud) {
              xd_fatal_error($cgi,$oErr);
          $xdDBH->disconnect();
              exit;
      }

        ####
        ## Otherwise we have a valid session
        ####

      ### Edited by Justin so that the partner_code is looked for
      ### in the cookie instead of the token table.
      # my $sPartner = $oToken->data('partner_code');
      my $sPartner = $oCookie->getElement('partner');
      my $nUser_ID = UserIdGet($oToken->data('user'));
```

```
        ## Grab the user info from the Database
        my $oUserInfo = XDrive::DatabaseO::Table::UserData->new({}, $xdDBH);

        my $sFileName = $cgi->param("sFileName");
        my $bHelp = $cgi->param("help");

        my $sFriendsEmail = &get_friends_emails($cgi);
        my $sEmailSubject = $cgi->param('sEmailSubject');
        my $sEmailMessage = $cgi->param("sEmailMessage");
        my $sFileDescription = $cgi->param("sFileDescription");

        my ($sRandomKey, $sFilePath);

        ## Load user info where the SEQ = $nUser_ID
        $oUserInfo->loadWhere("SEQ", $nUser_ID);

      my $sUser_name = $oUserInfo->fetchColumn("NAME_FIRST") . " " .
$oUserInfo->fetchColumn("NAME_LAST");
      my $sUser_email = $oUserInfo->fetchColumn("EMAIL_ADDRESS");

      if ($sFriendsEmail)
          {

            $sFilePath="/";
            $sFileName =~ m%(.*)/(.*)%;

            #inserted this code to catch documents that are not in a folder

            my $tempFilePath = "/" . $1;
            my $tempFileName = $2;

            if ($tempFileName ne "")
                  {
                  $sFileName=$tempFileName;
                  $sFilePath=$tempFilePath;
                  }

            &verify_database_values($nUser_ID, $sFileName, $sFilePath,
                              $sFilePath, $sFileName,
$sFileDescription,$oToken,$oErr);

            ## Insert the info into the disk_item_share table, and get the
random key
            $sRandomKey = &insert_file_into_database($nUser_ID, $sFileName,
$sFilePath, $sFileDescription, $xdDBH,$oToken,$oErr);

&send_mail($sFriendsEmail, $sEmailSubject, $sEmailMessage, $sFileDescription,
$sUser_name, $sUser_email, $nUser_ID,
$sRandomKey,$sPartner,$oToken,$oErr,$cgi);

              &display_thank_you($sPartner);

          }
            else {
            $oUserInfo->finish();
            $xdDBH->disconnect();
              &display_form($sFileName, $bHelp, $sPartner);
          }

     $oUserInfo->finish();
     $oUserInfo->disconnect();
}
```


NSDOCID: <WO_____0133381A1_IA>

```
sub send_mail {
    my ($sFriendsEmail, $sEmailSubject, $sEmailMessage, $sFileDescription,
$sUser_name, $sUser_email, $nUser_ID, $sRandomKey,
$sPartner,$oToken,$oErr,$oCGI) = @_;

      ##get language from the cookie.  If not english, append language code
to url
      my $oCookie = new XDrive::CGI::Cookie('x_session_info', $oCGI);
      my $language = $oCookie->getElement('language');
      if ($language ne 'english')
      {
            if ($language eq 'spanish')
            {
                  $sRandomKey .= "-SP";
            }
      }

    $sEmailMessage = &get_message($sEmailMessage,
$sRandomKey,$sPartner,$nUser_ID);

    my %toXdrive =
          (
          To      => "$sFriendsEmail",
          From    => "$sUser_name <$sUser_email>",
          Message => $sEmailMessage,
          Subject => "$sEmailSubject",
          );

    unless (sendmail %toXdrive)
          {
            warn "## Mail error ".$Mail::Sendmail::error;
            if ($Mail::Sendmail::error =~ /451/)
                  {
                  my $sMessage = $oErr->ReturnMessageGivenCode(1310);
                  XDErrorToBrowser("",$sMessage,undef,$oToken);
                  }
            else
                  {
                  my $sMessage = $oErr->ReturnMessageGivenCode(1311);
                  XDErrorToBrowser("",$sMessage,undef,$oToken);
                  }
            exit(1);
            }
}

sub get_message {
    my ($sEmailMessage, $sRandomKey,$sPartner,$n_UserID) = @_;

    my $oMessage = new XDrive::Template;
    $oMessage->partner($sPartner);
    $oMessage->load('share_a_file__message.thtml');

    $oMessage->tags
        ({
        'Message' => $sEmailMessage,
      'RandomKey' =>$sRandomKey,
        'nUser_ID' =>$n_UserID,
      'sender' =>$ENV{'HTTP_HOST'},
        });

    return $oMessage->get;
```

```
}

sub display_form {
    my ($sFileName, $bHelp,$sPartner) = @_;
    my $oForm = new XDrive::Template;
    $oForm->partner($sPartner);
    $oForm->load('share_a_file.thtml');

    my $sHelp='';

    if ($bHelp eq 'true')
    {
    my $oHelp = new XDrive::Template;
    $oHelp->partner($sPartner);
    $oHelp->load('share_a_file_help.thtml');
    $sHelp = $oHelp->get;
    }

    $oForm->tags
        ({
        'sFileName' => $sFileName,
      'helptext' => $sHelp
        });

    print header, $oForm->get;
    exit(0);
}

sub display_thank_you {
    my $sPartner = shift;
    my $oForm = new XDrive::Template;
    $oForm->partner($sPartner);
    $oForm->load('share_a_file__t_y.thtml');
    print header, $oForm->get;
    exit(0);
}

sub verify_database_values {
    my ($nUser_ID, $sFileName, $sFilePath, $sFilePath, $sFileName,
$sDescription,$oToken,$oErr) = @_;

    if (length($sDescription) > 255) {
      my $sMessage = $oErr->ReturnMessageGivenCode(1320);
      XDErrorToBrowser("",$sMessage,undef,$oToken);
    }

    if (length($sFilePath) > 255) {
      my $sMessage = $oErr->ReturnMessageGivenCode(1321);
      XDErrorToBrowser("",$sMessage,undef,$oToken);
    }

    if (length($sFileName) > 255) {
      my $sMessage = $oErr->ReturnMessageGivenCode(1322);
      XDErrorToBrowser("",$sMessage,undef,$oToken);
    }

}


sub insert_file_into_database {
    my ($nUser_ID, $sFileName, $sFilePath, $sFileDescription,
$xdDBH,$oToken,$oErr) = @_;
```


BNSDOCID: <WO_____0133381A1_IA>

```
    my @characters = ('a'..'z','A'..'Z','0'..'9');

    ##seed random number generator
    srand(truly_random_value());
    my $gmTime = time;
    ##grab length of time
    my $randLen = 32 - length($gmTime);
    my $sRandomKey = XDRandomString($randLen,\@characters);
    ##now we have a Random key
    $sRandomKey = $gmTime . $sRandomKey;
    ##  at this point we have a random number
    ##  of length gmTime with the current gmt time appended to it



    my $transaction = XDrive::DatabaseO::Transaction->new($xdDBH);
    my $status = $transaction->insertDiskItemShare($nUser_ID, $sRandomKey,
$sFilePath, $sFileName, $sFileDescription);

    if ($status < 0)
    {
      $transaction->rollback();
      my $sMessage = $oErr->ReturnMessageGivenCode(1323);
      XDErrorToBrowser("",$sMessage,undef,$oToken);
      exit(1);

    }
    else
    {
      $transaction->commit();
    }

    return $sRandomKey;
}

sub get_friends_emails {
    my $cgi = shift;
    my ($email_list, @email_array);

    if (length $cgi->param('sFriendsEmail0') > 0)
      {
      push(@email_array, $cgi->param('sFriendsEmail0'));
      }

    if (length $cgi->param('sFriendsEmail0') > 0)
      {
      push(@email_array, $cgi->param('sFriendsEmail1'));
      }

    if (length $cgi->param('sFriendsEmail0') > 0)
      {
      push(@email_array, $cgi->param('sFriendsEmail2'));
      }

    if (length $cgi->param('sFriendsEmail0') > 0)
      {
      push(@email_array, $cgi->param('sFriendsEmail3'));
      }

    if (length $cgi->param('sFriendsEmail0') > 0)
      {
      push(@email_array, $cgi->param('sFriendsEmail4'));
      }
```


BNSDOCID: <WO 0133381A1 IA>

```
    $email_list = join(",", @email_array);
    return $email_list;
}
```


3NSDOCID: <WO 0133381A1 IA>

###signup_account.cgi

```
#!/usr/bin/perl
## -d:DProf
## -d:SmallProf
## Written by Martin Hald <mhald@uci.edu> on Wed Apr 7 1999.  This program
## adds new users to the database.
## Modified by Justin White for cookie referee and promo stuff and to make
## mod_perl friendly and to work with changes to the Security module and
## to get rid of the XDrive::CGI module and to create a CGI object.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use CGI::Carp qw(fatalsToBrowser);
use XDrive::Client::Registration;
use XDrive::Error;
use XDrive::Client::Security;
use XDrive::Template;
use XDrive::DatabaseO::Table::UserData;
use XDrive::DatabaseO::Transaction;
use XDrive::DatabaseO::Table::UserQuota;
use XDrive::DatabaseO::Table::Promo;
use XDrive::DatabaseO::Table::DiskAccount;
use XDrive::DatabaseO::Table::Reseller;
use XDrive::Template;
use XDrive::DatabaseO::Search;
use XDrive::CGI::Cookie;
use XDrive::Library;
use Mail::Sendmail;
use CGI qw(param redirect header cookie);

BEGIN
{
      push(@INC, "/export/home/www/thirdparty/mint2/perl");
}

use Mint2;

&main;

exit;

sub main {
      my $oCGI     = new CGI;
        my $oCookie = XDrive::CGI::Cookie->new('x_session_info', $oCGI);
        my $oSTDCookie = XDrive::CGI::Cookie->new('xd_std_info', $oCGI);

      my $file_found;

      ### Use the new XDrive::CGI::Cookie now.
      my $promo_uri       = $oCookie->getElement('promo');
      my $ref_seq_cookie = $oCookie->getElement('referee');
      my $referred_from   = $oCookie->getElement('refered_from');
      my $claim_ticket    = $oCookie->getElement('ct');

      my $ref_seq_param     = $oCGI->param('referee');
      my $password          = $oCGI->param('password');
      my $password_confirm = $oCGI->param('password_confirm');
      my $birth_year        = $oCGI->param('birth_year');
```

```
my $username          = $oCGI->param('username');
my $name_first        = $oCGI->param('name_first');
my $name_last         = $oCGI->param('name_last');
my $email_address     = $oCGI->param('email_address');
my $country_seq       = $oCGI->param('country');
my $gender_seq        = $oCGI->param('gender');
my $postal_code       = $oCGI->param('zip2');
my $occupation_seq    = $oCGI->param('occupation');
my $referee           = $oCGI->param('referee');
my $marketing         = $oCGI->param('marketing');
my $newsletter        = $oCGI->param('newsletter');
my $media_type_seq    = $oCGI->param('media_type');


## PARAMS TO GATHER IF THIS IS CALLED FROM SKIP
## THE DOWNLOAD
my $sSTDPartner = $oSTDCookie->getElement('STDPARTNER');
my $sLanguage   = $oSTDCookie->getElement('LANG');
my $sFileURL    = $oSTDCookie->getElement('FILEURL');
my $sFileName   = $oSTDCookie->getElement('FILENAME');
my $sAltURL     = $oSTDCookie->getElement('ALTURL');
my $sCatId      = $oSTDCookie->getElement('CATID');
my $sGid        = $oSTDCookie->getElement('GID');
my $sSid        = $oSTDCookie->getElement('SID');


 ## check if database is up
 my $oDBO;
 my $oSearch;
 if (XDDBConnectionCheck() && XDNFSCheck())
 {
    ## connection good proceed normally
  $oDBO    = new XDrive::DatabaseO(undef);
    $oSearch = XDrive::DatabaseO::Search->new($oDBO);
 }
 else
 {
    ## connection bad write data to a temp file and load
    ## upgrading page telling them that they will be
    ## informed once X:drive is up
    $oDBO    = undef;
    $oSearch = undef;
    my $tempVar;

    my $tempEmail = $oCGI->param('friends_email1');
    my $numFriends = $oCGI->param('numFriends');


    my $addrArray  = $tempEmail;
    my $nameArray  = $oCGI->param('friends_name1');

    ## generate list for the javascript array
    for (my $i = 2;$i <= $numFriends;$i++)
    {
      $tempVar = $oCGI->param('friends_email' . $i);

      if ($tempVar)
      {
        $addrArray .= "~" . $tempVar;
        $nameArray .= "~" . $oCGI->param('friends_name' . $i);
      }
    }
```


3NSDOCID: <WO_____0133381A1 IA>

```
        reg_while_down (
                        $promo_uri,
                        $ref_seq_cookie,
                        $referred_from,
                        $claim_ticket,
                        $ref_seq_param,
                        $password,
                        $birth_year,
                        $username,
                        $name_first,
                        $name_last,
                        $email_address,
                        $country_seq,
                        $gender_seq,
                        $postal_code,
                        $occupation_seq,
                        $referee,
                        $marketing,
                        $newsletter,
                        $media_type_seq,
                          $nameArray,
                          $addrArray
                          );

            ## leave and show upgrading page test me
            print redirect("/upgrading_signup_success.html");
            exit;
          }

      ##my $oDBO    = new XDrive::DatabaseO(undef);
      ##my $oSearch = XDrive::DatabaseO::Search->new($oDBO);

      ######
      ### If media_type_seq equals 'notset', then set it to NULL.
      ######
      $media_type_seq = '' if $media_type_seq eq 'notset';

      my $partner_code = 'xdrv';
      my $partner_seq  = 1;

      my $promo_seq;

      ######
      ### Check to see how the referee sequence, if any, was passed in.
      ### If it was passed in via cookie, then use that.  Else, assume
      ### that it is a form parameter.
      ######
      my $ref_seq = $ref_seq_cookie ? $ref_seq_cookie : $ref_seq_param;

      ######
      ### If we were passed a promo uri, then let's get the promo seq
      ### from promo table using Promo.pm to pass to xd_client_register.
      ######
      if ($promo_uri) {
            my $oPromoInfo = XDrive::DatabaseO::Table::Promo-
>new(undef,$oDBO);
            $oPromoInfo->loadWhere('URI', $promo_uri);
            $promo_seq = $oPromoInfo->fetchColumn('SEQ');

            $oPromoInfo->finish();
      }

      ######
```

```
        ### Load the required template HTML files.  The content that we load
  depends
        ### on if the new registration went through or if we need to have them
  re-fill
        ### the form.
        ######
          my $oContent    = new XDrive::Template( {'partner_code' => 'xdrv'} );
          my $oLayout     = new XDrive::Template( {'partner_code' => 'xdrv'} );
          my $oNavigation = new XDrive::Template( {'partner_code' => 'xdrv'} );

        my $oErr = new XDrive::Error;

        $oContent->load('front_signup.thtml');
        $oNavigation->load('front_nav.thtml');
        $oLayout->load('layout.thtml');

        ######
        ### Perform data validation
        ######
        if ($password ne $password_confirm) {
              $oErr->AddErrorByErrorCode(709);
        }


        ######
        ### Attempt to register the user if no errors have been logged
        ######
        if (! $oErr->Occurud ) {
              xd_client_register( {'birth_year'     => $birth_year,
                                   'partner_seq'    => $partner_seq,
                                   'username'       => $username,
                                   'password'       => XDEncrypt($password),
                                   'name_first'     => $name_first,
                                   'name_last'      => $name_last,
                                   'email_address'  => $email_address,
                                   'country_seq'    => $country_seq,
                                   'gender'         => $gender_seq,
                                   'postal_code'    => $postal_code,
                                   'occupation_seq' => $occupation_seq,
                                   'referee'        => $ref_seq,
                                   'marketing'      => $marketing,
                                   'newsletter'     => $newsletter,
                                   'partner_code'   => $partner_code,
                                         'promo_seq'      => $promo_seq,
                                         'media_type_seq' => $media_type_seq},
  $oCGI, $oErr, $oDBO );
        }

        if ($oErr->MaxIndex() < 0) {
              ## No errors occured, the user has already been added to the
              ## database through the xd_client_register subroutine so now
              ## send the user an email and then
              ## log the user and go to the user's homepage.

              client_email_send($username,
                                $name_first,
                                $name_last,
                                $email_address,
                                'X\:drive Team <team@xdrive.com>',
                                'Welcome to X:drive! - Important Account
  Information',
                                $partner_code,
                                $promo_seq);
```


3NSDOCID: <WO_____0133381A1_IA>

```
            ######
        ### If we have a claim ticket, then remove that ticket
        ### from the batch_user_data table because the user has
        ### been added and we don't need that data anymore.
            ######
        if ($claim_ticket) {
            my $oTransaction = XDrive::DatabaseO::Transaction-
>new($oDBO);

           my $rv = $oTransaction->removeClaimTicket($claim_ticket);

            if ($rv == 1) {
               $oTransaction->commit();
            }
            else {
               $oTransaction->rollback();
            }
        }

        ##if we have a referee seq, give the referee additional space

        if ($ref_seq >= 1) {

            ## johngaa add to exclude college club and quepasa users
out
            my $oUserData = XDrive::DatabaseO::Table::UserData-
>new(undef,$oDBO);
            $oUserData->loadWhere("SEQ", $ref_seq);
            my $reseller_seq = $oUserData-
>fetchColumn("RESELLER_SEQ");
            if (!(isResellerSeqCC_QUPA($oDBO,$reseller_seq)))
            {

               ## end of johngaa

           my $oUserQuota = XDrive::DatabaseO::Table::UserQuota-
>new(undef, $oDBO);
           $oUserQuota->loadWhere("USER_SEQ", $ref_seq);
           my $additional_quota = $oUserQuota-
>incrementQuota($ref_seq, 5120);

           if ($additional_quota > 0) {

&send_email_referee($ref_seq,$oDBO,$oCookie,$additional_quota,$referred_from)
;
           }

           $oUserQuota->finish();
            }

        }

        ##if the user is from Cybergold, process through Cybergold
        if ($promo_uri=~/cybergold/) {
           my ($code, %res) =
&contact_cybergold($oCGI,$username,$email_address);
        }

        ##if user is coming from the befree promo
        ##write to file that they've signed up
        if ($promo_uri =~ /befree/) {
            &write_befree_log($oCGI);
```

```
            }

            if ($sFileURL eq '') {

                client_login($username, $oCGI);

            } else {

                std_login($username,
                        $oCGI,
                        $sSTDPartner,
                        $sLanguage,
                        $sFileURL,
                        $sFileName,
                        $sAltURL,
                        $sCatId,
                        $sGid,
                        $sSid);
            }

            $oSearch->disconnect();

            exit;
        }
        else {
            ## Reload the signup form, show the errors and pre-fill all
            ## the form elements except the password.

            ##if we are overriding standard registration form
                ##load it here

                if ($promo_uri)
                {
                        $file_found = $oContent->load($promo_uri .
'_registration.thtml');
                  if (!$file_found)
                  {
                        $file_found = $oContent-
>load('promo_registration.thtml');
                  }
                }

                if ((!$promo_uri) || (!$file_found))
                {
                        $oLayout->load("layout.thtml");
                        $oNavigation->load("front_nav.thtml");
                        $oContent->load("front_signup.thtml");
                }

            my ($select_marketing, $select_newsletter);

            my $checked = "CHECKED";

            if ($marketing eq 'on') {
                $select_marketing = $checked;
            }

            if ($newsletter eq 'on') {
                $select_newsletter = $checked;
            }

            ## IMPORTANT ##
            ## make sure to put all non text fields at the top of
```


3NSDOCID: <WO_____0133381A1_IA>

```
                ## the tags function or it will gag

            ## Search and replace the following tags
            $oContent->tags( {'country'           =>
xd_form_countries($country_seq, $oSearch),
                              'occupation'        =>
xd_form_occupation($occupation_seq, $oSearch),
                              'media_type'        =>
xd_form_media_type($media_type_seq, $oSearch),
                              'gender'            =>
xd_form_gender($gender_seq, $oSearch),
                              'select_marketing'  => $select_marketing,
                              'select_newsletter' => $select_newsletter,
                              'errors'            => format_errors($oErr),
                              'username'          => $username,
                              'name_first'        => $name_first,
                              'name_last'         => $name_last,,
                              'email_address'     => $email_address,
                              'birth_year'        => $birth_year,
                              'postal_code'       => $postal_code} );

                ##
                ## Added to have tell a friend support in registration
                ##

                my (@addrArray, @nameArray, $tempIndex, $tempName,
$tempEmail, $tempNum);

                ## tell a friend data will be coming in to signup_form
                ## seperated by commas

                @addrArray = split /,/,$oCGI->param('friends_email_array');
                @nameArray = split /,/,$oCGI->param('friends_name_array');

                $tempNum = $oCGI->param('numFriends');

                for (my $tempIndex=1;$tempIndex <= $tempNum;$tempIndex++) {
                   $tempName  = 'friends_name' . $tempIndex;
                   $tempEmail = 'friends_email' . $tempIndex;

                   $oContent->tags( {$tempName  => $oCGI->param($tempName),
                                     $tempEmail => $oCGI->param($tempEmail)}
);

                }

            ## Clear the content of any unused tags.
            $oContent->clear;
        }

        ##if we are loading a non-standard registration, it's only one page
          if (($promo_uri) && ($file_found))
          {
                print $oCGI->header(), $oContent->get;
          }
          else
          {
              ## Print out the HTML and exit
              $oLayout->tags( {'header_graphic' => 'header_registration.gif',
                       'title'          => 'Register Now!',
                       'content'        => $oContent->get,
                       'navigation'     => $oNavigation->get} );
```

```
            print $oCGI->header(), $oLayout->get;
        }

        $oSearch->disconnect();

        return 0;
}


sub isResellerSeqCC_QUPA
{
    my $oDBO = shift;
    my $reseller_seq = shift;
    my $dbh = $oDBO->fetchDBH();

    my $sql_stmt = "SELECT code FROM reseller WHERE seq=?";
    my $cmd;
    my @data;

    $cmd = $dbh->prepare($sql_stmt);
    $cmd->execute(($reseller_seq));
    @data = $cmd->fetchrow_array;
    if ($data[0] eq 'cc' || $data[0] eq 'qupa')
    {
        return 1;
        ##print "should return  a true\n"
    }
    return 0;
}



##############################################################################
## reg_while_down:  Grabs all data that is needed to register a user
## routine will add the data to a file in the tmp directory of the name
## reg_while_down.datetime
##############################################################################
sub reg_while_down
{
    my ($promo_uri,$ref_seq_cookie,$referred_from,$claim_ticket,
        $ref_seq_param,$password,$birth_year,$username,$name_first,
        $name_last,$email_address,$country_seq,$gender_seq,$postal_code,
        $occupation_seq,$referee,$marketing,$newsletter,$media_type_seq,
        $tell_a_friend_name,$tell_a_friend_addr) = @_;

    my $filename = XDGetRegDatFile();
    open OUTFILE, ">>$filename";

    print OUTFILE "$promo_uri,$ref_seq_cookie,$referred_from,";
    print OUTFILE "$claim_ticket,$ref_seq_param,$password,";
    print OUTFILE "$birth_year,$username,$name_first,";
    print OUTFILE "$name_last,$email_address,$country_seq,";
    print OUTFILE "$gender_seq,$postal_code,$occupation_seq,";
    print OUTFILE "$referee,$marketing,$newsletter,$media_type_seq,";
    print OUTFILE "$tell_a_friend_name,$tell_a_friend_addr\n";
    close OUTFILE;
}

##############################################################################
## format_errors:  Accept an error object and return an ordered list of
## errors in HTML format.
##############################################################################
```


3NSDOCID: <WO_____0133381A1_IA>

```
sub format_errors {
      my $oErr = shift; ## (I) errors

      my $txt;        ## formated HTML
      my $bPassword; ## has a password error been found?

      $txt .= "<ol>\n";

      my $nNumErrors = $oErr->MaxIndex();

      for (my $i = 0;$i <= $nNumErrors;$i++) {
            my $error = $oErr->Message();

            if ($error =~ /assword/) {
                  $bPassword = 1;
            }

            $txt .= "<li><font color=RED>$error</font>\n";
      }

      if (! $bPassword) {
            $txt .= "<li><font color=RED>Please re-enter your
password</font>\n";
      }

      $txt .= "</ol>\n";

      return $txt;
}

##############################################################################
## client_login:  Create the needed token to identify the client and redirect
## them to thier new homepage.
##############################################################################

sub client_login ($$) {
        ## No errors occured, add the user to the parter/user->real
        ## user mapping and return a success code.

      my $username = shift;
      my $oCGI     = shift;

      my $oDBO     = new XDrive::DatabaseO(undef);
        my $oCookie = XDrive::CGI::Cookie->new('x_session_info', $oCGI);

      ######
      ### Check the x_session_info cookie for promo or referee and
      ### if they exist, delete those hash elements and reset the cookie.
      ######

      my $promo_cookie = $oCookie->getElement('promo');
      my $ref_cookie   = $oCookie->getElement('referee');

        if ($ref_cookie || $promo_cookie) {
            $oCookie->deleteElement('referee') if $ref_cookie;
            $oCookie->deleteElement('promo')   if $promo_cookie;

            print "Set-Cookie: ", $oCookie->asString();
        }

      my $oError = new XDrive::Error;
      my $oToken = xd_login($oCGI, $username, $oError, $oDBO);
```

```
      ## we need to do all of this to get the reseller code to show the
correct page
      my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount->new(undef,
$oDBO);

        $oDiskAccount->loadWhere("USERNAME", $username);

        my $oUser = XDrive::DatabaseO::Table::UserData->new(undef,
$oDiskAccount->fetchDBO);

        $oUser->loadWherePK($oDiskAccount->fetchColumn("USER_SEQ"));

        my $oReseller = XDrive::DatabaseO::Table::Reseller->new(undef,
$oDiskAccount->fetchDBO);

        $oReseller->loadWherePK($oUser->fetchColumn("RESELLER_SEQ"));

     my $oTemplate = new XDrive::Template;

       $oTemplate->partner($oReseller->fetchColumn("CODE"));

       ##  originally this is where the signup_form.cgi goes
     ##$oTemplate->load('splash.thtml');
     $oTemplate->load('tell_a_friend_frame.thtml');

       ##my $addrArray  = $oCGI->param('friends_email_array');
       ##my $nameArray  = $oCGI->param('friends_name_array');
       ##my $numFriends = $oCGI->param('numFriends');

       ## generate list for the javascript array
       ##my @addrList = split /,/, $addrArray;
       ##my @nameList = split /,/, $nameArray;

       ##$addrArray = "";
       ##$nameArray = "";

       ##my $count = @addrList - 1;

       ##for (my $i = 0;$i < $count;$i++) {
          ##$addrArray .= "\"" . $addrList[$i] . "\",";
          ##$nameArray .= "\"" . $nameList[$i] . "\",";
       ##}
       ## this will add the quote without the comma

     ##$addrArray .= "\"" . $addrList[$count] . "\"";
     ##$nameArray .= "\"" . $nameList[$count] . "\"";
## gets the array started
my $tempVar;

my $tempEmail = $oCGI->param('friends_email1');
my $numFriends = $oCGI->param('numFriends');


my $addrArray  = "\"" . $tempEmail . "\"";
my $nameArray  = "\"" . $oCGI->param('friends_name1') . "\"";

## generate list for the javascript array
for (my $i = 2;$i <= $numFriends;$i++)
{
  $tempVar = $oCGI->param('friends_email' . $i);

  if ($tempVar)
  {
```


ISDOCID: <WO_____0133381A1 IA>

```
        $addrArray .= ",\"" . $tempVar . "\"";
        $nameArray .= ",\"" . $oCGI->param('friends_name' . $i) . "\"";
      }
    }



    $oTemplate->tags( {'numFriends'          => $numFriends,
                       'friends_name_array'  => $nameArray,
                       'friends_email_array' => $addrArray} );

    print $oCGI->header();

    print $oTemplate->get();

    $oDiskAccount->finish();
    $oUser->finish();
    $oReseller->finish();
    $oDiskAccount->disconnect();
}


##############################################################################
## Login in user who is comming from a Skip The Download
## Registration
##############################################################################

sub std_login () {
    my $username    = shift;
    my $oCGI        = shift;
      my $sSTDPartner = shift;
      my $sLanguage   = shift;
      my $sFileURL    = shift;
      my $sFileName   = shift;
      my $sAltURL     = shift;
      my $sCatId      = shift;
      my $sGid        = shift;
      my $sSid        = shift;
    my $oDBO    = new XDrive::DatabaseO(undef);

    my $oError = new XDrive::Error;
    my $oToken = xd_login($oCGI, $username, $oError, $oDBO);
    xd_set_session_cookie($oCGI, $sSTDPartner, $sLanguage);


    my $oTemplate = new XDrive::Template
      ({
      'partner_code' => $sSTDPartner,
      'language' => $sLanguage,
      'file' => 'skip_the_download_from_reg.thtml',
      'tags' =>
            {
            'FILE_URL'  => $sFileURL,
        'FILE_NAME' => $sFileName,
        'ALTRUL' => $sAltURL,
            'LANG' => $sLanguage,
            'STDPARTNER' => $sSTDPartner,
        'CATID' => $sCatId,
        'GID' => $sGid,
        'SID' => $sSid,
            }
      });
```

```
        $oTemplate->clear();
        print "Content-type: text/html\n\n";
        print $oTemplate->get();
        $oDBO->disconnect();
}

sub contact_cybergold {
        my $oCGI  = shift;
        my $msgid = shift;
        my $email = shift;

        my %args = (
        'mint_home'     => $ENV{'MINT_HOME'},
        'msg_mode'      => 'background_mode',

        'usr_email'     => $email,
        'msg_id'        => $msgid,

        'pay_type'      => 'reward',
        'pay_value'     => '1.00',
        'pay_readme'    => 'Thanks for registering with X:drive.',

        'co_name'       => 'X Drive',
        'co_key'        => 'registration',
        'co_account'    => '100500900000396',
        'mint_secret'   => '184FEB9DB81944502A1C91B2879484B6',

        'mint_url_pay' => 'http://www1.cybergold.com/payserver?pay_server',
        'msg_version'  => '2.2'
        );

        my($code, %res) = mint_invoke(\%args);

        ##this is temp code to print out stuff for cybergold
        ##my @keys = keys %res;
        ##my @values = values %res;
        ##while (@keys)
        ##{
        ##    die pop(@keys), '=', pop(@values), "\n";
        ##}

        return $code;
}

sub write_befree_log {
        my $oCGI = shift;

        my $source_id = $oCGI->cookie('sourceid');

        ##get the time
        ##needed to figure out name of file to write to
        my ($nSec, $nMin, $nHour, $nDay, $nMonth, $nYear, $sDay) =
(localtime(time))[0,1,2,3,4,5,6];

      if ($nYear > 99) {
            $nYear = substr($nYear,1,2);
        }

        ## Numeric month is 0-11, so add one
        $nMonth++;

        ## Handle Y2K issue
```


INSDOCID: <WO_____0133381A1_IA>

```
        if ( $nYear >= 80 ) {
                $nYear += 1900;
        }
        else {
                $nYear += 2000;
        }

        my $dToday = sprintf("%s%02d%02d", $nYear, $nMonth, $nDay);
        my $dTodayFull = sprintf("%02d%02d%s
%02d:%02d:%02d",$nMonth,$nDay,$nYear,$nHour,$nMin,$nSec);

        my $text =
"14524098\tS\t$dTodayFull\t$source_id\t1\t1\t1\t0.00\tUSD\tregistration\n";

      warn "#BF", $text, "\n";
        ##open(FILE, ">>xdrive_orders_$dToday.txt");
        ##print FILE $text;
        ##close(FILE);
}

sub send_email_referee {
        my $user_seq = shift;
        my $oDBO = shift;
      my $oCookie = shift;
        my $additional_quota = shift;
      my $referred_from = shift;

      my $language = $oCookie->getElement('language');
      my $partner = $oCookie->getElement('partner');

      if ($language eq 'spanish') {
            my $text = 'un amigo que usted refirió';
            if ($referred_from eq '2') {
                  $text = 'un usted compartió un fishero con';
            }
      }
      else {
            my $text = 'referred';
            if ($referred_from eq '2') {
                  $text = 'shared a file with';
            }
      }

      my $text = 'referred';
      if ($referred_from eq '2') {
            $text = 'shared a file with';
      }

        ##comes in as k, change to megabytes
        my $mbs = $additional_quota/1024;

        my $oUserData = XDrive::DatabaseO::Table::UserData->new(undef,
$oDBO);
        $oUserData->loadWhere("SEQ", $user_seq);
        my $email_address = $oUserData->fetchColumn("EMAIL_ADDRESS");
        my $name_first = $oUserData->fetchColumn("NAME_FIRST");
        my $name_last = $oUserData->fetchColumn("NAME_LAST");

        my $oTemplate =  new XDrive::Template( {'language'     => $language,
                                          'partner_code' => $partner} );

        $oTemplate->load('received_5MB_tellafriend.thtml');
```


ENSDOCID: <WO 0133381A1 IA>

```
        $oTemplate->tags( {'mbs'  => $mbs,
                           'text' => $text} );
        $oTemplate->clear();

        my $message = $oTemplate->get;

        my %toXdrive =
            (
            To      => "$name_first $name_last <$email_address>",
            Bcc     => '',
            From    => "support\@xdrive.com",
            Message => $message,
            Subject => "Congratulations!"
            );

        sendmail(%toXdrive);

    $oUserData->finish();
}
```


BNSDOCID: <WO_____0133381A1_IA>

###signup_form.cgi

```
#!/usr/bin/perl
## Written by Martin Hald <mhald@uci.edu> on Sat, Jan 30, 1999.  Updated
## Fri Apr 5, 1996 to use new templates.  Updated Wed Apr 21 1999 to use
## new library code.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use CGI::Carp 'fatalsToBrowser';
use XDrive::CGI qw(:MAIN);
use XDrive::Client::Registration;
use XDrive::Template;
use XDrive::DatabaseO::Search;
use XDrive::Library;

use constant XD_REGISTRATION_DEFAULT_COUNTRY => 223;

exit &main;

sub main {
      my $oContent    = new XDrive::Template;
      my $oNavigation = new XDrive::Template;
      my $oLayout     = new XDrive::Template;
      my $oCGI        = new CGI;

      my $oCookie = XDrive::CGI::Cookie->new('x_session_info', $oCGI);

      my $oSearch;

        my $sReferee     = $oCGI->param('referee');
        my $sClaimTicket = $oCookie->getElement('ct');

      ## Defaults
      my $sUsername     = undef;
      my $sNameFirst    = undef;
      my $sNameLast     = undef;
      my $nYOB          = undef;
      my $nPromoSeq     = undef;
      my $nGender       = 3;
      my $sEmailAddress = undef;


        my ($country_seq, $occupation_seq, $postal_code, $ct_promo_seq);


        my %pullDownHash;
        if (XDDBConnectionCheck() && XDNFSCheck())
        {
            $oSearch = XDrive::DatabaseO::Search->new(undef);
        }
        else
        {
            $sClaimTicket = undef;
            $oSearch = undef;
            %pullDownHash = generate_db_array();
        }
     if ($sClaimTicket) {
           my $rhData = getUserData($oSearch, $sClaimTicket);
```


3NSDOCID: <WO_____0133381A1_IA>

```
            if ($rhData) {
                  my $oNewCgi = CGI->new($rhData);

                  $sUsername      = $oNewCgi->param('username');
                  $sNameFirst     = $oNewCgi->param('name_first');
                  $sNameLast      = $oNewCgi->param('name_last');
                  $sEmailAddress  = $oNewCgi->param('email_address');
                        $nYOB           = $oNewCgi->param('birth_year');
                  $nGender        = $oNewCgi->param('gender');
                  $occupation_seq = $oNewCgi->param('occupation_seq');
                  $country_seq    = $oNewCgi->param('country_seq');
                  $postal_code    = $oNewCgi->param('postal_code');
            }
      }

        if ($sReferee ne "") {
            # my $oCookie = XDrive::CGI::Cookie->new('x_session_info',
$oCGI);
                  my $sRefered_from = $oCGI->param('type');
            $oCookie->setElement({'partner_code'=>'xdrv'});
              $oCookie->setElement({'language'=>'english'});
                $oCookie->setElement({'referee' => $sReferee});
                $oCookie->setElement({'refered_from' => $sRefered_from});
                print "Set-Cookie: ".$oCookie->asString();
      }

     $oContent->partner('xdrv');
     $oNavigation->partner('xdrv');
     $oLayout->partner('xdrv');

     ## I'm assuming there will be one page and not a series of frames.
       ## this can be changed if need be
       # my $oCookie = XDrive::CGI::Cookie->new('x_session_info', $oCGI);
       # my $promo = $oCookie->getElement('promo');

       my $promo = $oCookie->getElement('promo');

     my $file_found;

       ##if we have a promo, try to get a special registration page
       if ($promo) {
           ##attempt to open a special registration page
               $file_found = $oLayout->load($promo . '_registration.thtml');
           if (!$file_found) {
                 ##if we cannot, open the general promo reg page
                 $file_found = $oLayout->load('promo_registration.thtml');
           }
       }

    ##is we don't have a promo then use the standard registration
       if ( (! $promo) || (! $file_found) ) {
           ## Load the required template HTML files.
           $oNavigation->load("front_nav.thtml");
           $oContent->load("front_signup.thtml");
           $oLayout->load("layout.thtml");

           $oContent->tags
           ({
           'username'          => $sUsername,
           'name_first'        => $sNameFirst,
           'name_last'         => $sNameLast,
           'email_address'     => $sEmailAddress,
```


NSDOCID: <WO_____ 0133381A1 IA>

```
            'country'           =>
xd_form_countries_db_check(XD_REGISTRATION_DEFAULT_COUNTRY,
$oSearch,\%pullDownHash),
            'occupation'        => xd_form_occupation_db_check(undef,
$oSearch,\%pullDownHash),
            'media_type'        => xd_form_media_type_db_check(undef,
$oSearch,\%pullDownHash),
            'gender'        => xd_form_gender_db_check(undef,
$oSearch,\%pullDownHash),
            'select_marketing'  => 'CHECKED',
            'select_newsletter' => 'CHECKED',
            'referee'           => $sReferee,
            });

            ## Print out the HTML and exit
            $oLayout->tags
                ({
                'header_graphic' => 'header_registration.gif',
                'title' => 'Register Now!',
                'content' => $oContent->get,
                'navigation' => $oNavigation->get
                });
      }
      elsif ($sClaimTicket) {
            $oLayout->tags
                ({
                'country'           => xd_form_countries($country_seq,
$oSearch),
                'occupation'        => xd_form_occupation($occupation_seq,
$oSearch),
                'media_type'        => xd_form_media_type(undef, $oSearch),
                'gender'            => xd_form_gender($nGender, $oSearch),
                'select_marketing'  => 'CHECKED',
                'select_newsletter' => 'CHECKED',
            'username'          => $sUsername,
            'name_first'        => $sNameFirst,
            'name_last'         => $sNameLast,
                'email_address'     => $sEmailAddress,
                'birth_year'        => $nYOB,
                'referee'           => $sReferee,
                'postal_code'       => $postal_code
                });
        }
      else {
            $oLayout->tags
                ({
                'country'           =>
xd_form_countries_db_check(XD_REGISTRATION_DEFAULT_COUNTRY,
$oSearch,\%pullDownHash),
                'occupation'        => xd_form_occupation_db_check(undef,
$oSearch,\%pullDownHash),
                'media_type'        => xd_form_media_type_db_check(undef,
$oSearch,\%pullDownHash),
                'gender'            => xd_form_gender_db_check(undef,
$oSearch,\%pullDownHash),
                'select_marketing'  => 'CHECKED',
                'select_newsletter' => 'CHECKED',
                'referee'           => $oCGI->param('referee'),
                });
      }

        $oLayout->clear;
```

```
        print $oCGI->header, $oLayout->get;
        if (defined $oSearch)
        {
          $oSearch->disconnect();
        }

      return 0;
}


## johngaa add to check of db is up or down
sub generate_db_array
{
   ## create a hash
   my %tempHash;
   my $i = 1;
   my $key;
   my @tempVal;
   open FH,"<down_data.dat";

   while(<FH>)
   {
        chomp $_;
        if ($_ =~ /^#(\w+)/g)
        {
           my @newArray;
           $i = 1;
           $key = $1;
           $tempHash{$key} = [ @newArray ];
        }
        else
        {
          @tempVal = split(/\~/,$_);

          $tempHash{$key}->[$i - 1][0] = $tempVal[0];
          $tempHash{$key}->[$i - 1][1] = $tempVal[1];
          $i++;
        }
   }

   close FH;
   return %tempHash;
}

sub xd_form_countries_db_check
{
   my $default = shift;
   my $oSearch = shift;
   my $pullDownHash = shift;
   my $returnVal;

   if (defined $oSearch)
   {
      $returnVal = xd_form_countries(XD_REGISTRATION_DEFAULT_COUNTRY,
$oSearch),
   }
   else
   {
      ## insert alternate source of countries here
      my $temp1 = $pullDownHash->{'country'};
      $returnVal = options_list(XD_REGISTRATION_DEFAULT_COUNTRY,@$temp1);
   }
```


NSDOCID: <WO 0133381A1 IA>

```
    return $returnVal;
}


sub xd_form_occupation_db_check
{
    my $default = shift;
    my $oSearch = shift;
    my $pullDownHash = shift;
    my $returnVal;

    if (defined $oSearch)
    {
        $returnVal = xd_form_occupation(undef, $oSearch),
    }
    else
    {
        ## insert alternate source of countries here
        my $templ = $pullDownHash->{'occupation'};
        $returnVal = options_list(undef,@$templ);
    }

    return $returnVal;
}

sub xd_form_media_type_db_check
{
    my $default = shift;
    my $oSearch = shift;
    my $pullDownHash = shift;
    my $returnVal;

    if (defined $oSearch)
    {
        $returnVal = xd_form_media_type(undef, $oSearch),
    }
    else
    {
        ## insert alternate source of countries here
        my $templ = $pullDownHash->{'media_type'};
        $returnVal = options_list(undef,@$templ);
    }

    return $returnVal;
}

sub xd_form_gender_db_check
{
    my $default = shift;
    my $oSearch = shift;
    my $pullDownHash = shift;
    my $returnVal;

    if (defined $oSearch)
    {
        $returnVal = xd_form_gender(undef, $oSearch),
    }
    else
    {
        ## insert alternate source of countries here
        my $templ = $pullDownHash->{'gender'};
        $returnVal = options_list(undef,@$templ);
    }
```

```
    return $returnVal;
}


## end of johngaa add
sub getPromoURI ($$) {
   my $oSearch   = shift;
   my @promo_seq = (shift);

   my $oDBH = $oSearch->fetchDBO->fetchDBH();

   my $st = "SELECT uri FROM xdrive.promo WHERE seq = ?";

   my $data = $oDBH->selectcol_arrayref($st, undef, @promo_seq);

   return $data->[0];
}

sub getUserData {
      my $oSearch = shift;
      my $sTicket = shift;

      my $oDBH    = $oSearch->fetchDBO->fetchDBH();
      my $sQuery  = "SELECT DATA FROM BATCH_USER_DATA WHERE CODE = ?";
        my $oCursor = $oDBH->prepare($sQuery);
        $oCursor->bind_param(1, $sTicket);
        $oCursor->execute;

      my $rh;
      my $sData = $oCursor->fetchrow_array();
      # my ($sData) = $oCursor->fetchrow_array();
      # eval $sData;
      # return $rh;
      return $sData;
}
```


NSDOCID: <WO 01333381A1 IA>

###signup_success.cgi

```
#!/usr/bin/perl
## This CGI allows us to pass the sst and sid on to the inner frame
##
## Modified by Justin White on 10/14/99 by manually printing the
## header to the browser and getting rid of the XDrive::CGI import.
## Created new cgi, database, and error objects to pass to xd_security_check.
## Also added the exit in the sub call.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI::Carp qw(fatalsToBrowser);
use CGI ();
use Token;
use XDrive::Client::Security;
use XDrive::Template;
use XDrive::DatabaseO;
use XDrive::Error;
use XDrive::Library;
use XDrive::CGI::Cookie;

&main();

exit;

sub main
      {
        my $oCGI     = new CGI;
        my $oDBO     = new XDrive::DatabaseO;
        my $oErr     = new XDrive::Error;
      my $oCookie = new XDrive::CGI::Cookie('x_session_info', $oCGI);

        ####
        ## Attempt to autenticate the user
        ####

        my $oToken = xd_security_check($oDBO,$oCGI,$oErr);

        ####
        ## If the autentication fails or there is an error during the
        ## autentication phase then redirect to the error CGI
        ####

        if ($oErr->Occurud)
                {
                xd_fatal_error($oCGI,$oErr);
                exit;
                }

        ####
        ## Otherwise we have a valid session
        ####

        my $sUsername = $oToken->data('user');

      ### Edited by Justin so that the partner_code is looked for in
      ### the cookie instead of the token table.
        # my $sPartner  = $oToken->data('partner_code');
        my $sPartner = $oCookie->getElement('partner');
```

```
        if (! defined $sPartner)
        {
           $sPartner = "xdrv";
           $oCookie->setElement({'partner'=>$sPartner});
           print "Set-Cookie: ",$oCookie->asString();
        }

        my $oTemplate = new XDrive::Template( {'partner_code' => $sPartner}
);

        $oTemplate->load('signup_success.thtml');
        $oTemplate->tags( {'username' => $sUsername} );

        print "content-type: text/html\n\n";

        print $oTemplate->get();

      $oDBO->disconnect();

        return 0;
}
```


BNSDOCID: <WO 01333381A1 IA>

###signup_toc.cgi

```
#!/usr/bin/perl
## Written by Martin Hald <mhald@uci.edu> on Sat, Jan 30, 1999.  Updated
## Fri Apr 5, 1996 to use new templates.
##
## Modified by Justin White on 10/11/1999 so that it sets a cookie.
##
## Modified by Martin Hald on 11/15/1999 so that is now accepts
##    - partner
##    - language
##    - agreeuri
##    - disagreeuri

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use CGI::Carp qw(fatalsToBrowser);
use XDrive::Template;
use XDrive::CGI::Cookie;

&main();

exit;

sub main {
      my $cookie;
      my $sPartnerCode;

      my $oCGI    = new CGI;
      my $oCookie = XDrive::CGI::Cookie->new('x_session_info', $oCGI);
      my $sReferee = $oCGI->param('referee');
      my $sPartner = $oCGI->param('partner');
      my $sLanguage = $oCGI->param('language');
      my $sRefered_from = $oCGI->param('type');

      $oCookie->setElement({'partner_code'=>$sPartner});
      $oCookie->setElement({'language'=>$sLanguage});

      if ($sReferee ne "") {
            $oCookie->setElement({'referee' => $sReferee});
            $oCookie->setElement({'refered_from' => $sRefered_from});
            print "Set-Cookie: ".$oCookie->asString();
      }

      if (! defined $sPartner) {
            $sPartner = 'xdrv';
      }

      ## Load the terms and conditions
      my $hDefaults = {'partner_code'=>$sPartner,'cookie'=>$oCookie};
      my $oContent  = new XDrive::Template($hDefaults);
      my $oLayout   = new XDrive::Template($hDefaults);

      $oContent->load('presignup.thtml');

      if ($sPartner eq 'xdrv') {
            my $oNavigation = new XDrive::Template($hDefaults);
            my $oHeader     = new XDrive::Template($hDefaults);
            my $oFooter     = new XDrive::Template($hDefaults);
```


BNSDOCID: <WO 01333381A1 IA>

```
            $oLayout->load('layout.thtml');
            $oNavigation->load('front_nav.thtml');
            $oHeader->load('presignup_header.thtml');
            $oFooter->load('presignup_footer.thtml');
            $oContent->tags({'header'    => $oHeader->get,
                             'footer'    => $oFooter->get, });
            $oLayout->tags({'navigation'     => $oNavigation->get,
                            'header_graphic' => 'header_registration.gif',});
        } else {
            $oLayout->load('tac_wrapper.thtml');
        }

        my $sAgreeURI    = $oCGI->param('agreeuri');
        my $sDisagreeURI = $oCGI->param('disagreeuri');

        $oLayout->tags({ 'title'       => 'Terms and Conditions',
                         'content'     => $oContent->get,
                         'agreeuri'    => $sAgreeURI,
                         'disagreeuri' => $sDisagreeURI,});
        $oLayout->clear;

        print $oCGI->header();
        print $oLayout->get;

        return 0;
}
```


BNSDOCID: <WO 0133381A1_IA>

###skip_the_download.cgi

```
#!/usr/bin/perl

use strict;
use lib $ENV{PERL_XDRIVE_LIB};

use CGI qw(param redirect header cookie);
use CGI::Cookie;

use LWP::UserAgent;

use CGI::Carp qw(fatalsToBrowser);
use XDrive::Client::Security;
use XDrive::Client::Actions;
use XDrive::DatabaseO::Table::DiskAccount;
use XDrive::DatabaseO::Search;
use XDrive::DatabaseO::Transaction;
use XDrive::Template;
use XDrive::CGI qw(:MAIN);
use XDrive::CGI::Cookie;
use XDrive::DatabaseO;
use XDrive::Error;

use constant TRUE => (1==1);
use constant FALSE => ! TRUE;
use Token;


my $oDBO = new XDrive::DatabaseO;
main($oDBO);

$oDBO->disconnect;
exit;

###############################################################################
## NOTE: Remove the quota check from here.  will be handled in java.
###############################################################################

sub main
      {

      my $oDBO = shift;
      my $oCGI    = CGI->new();
      my $oErr = new XDrive::Error;
      my $oCookie = XDrive::CGI::Cookie->new('xd_std_info', $oCGI);


      ## params for file url and file name
      my $sFileURL  = $oCGI->param('FILEURL');
      my $sFileName = $oCGI->param('FILENAME');
      my $sAltURL   = $oCGI->param('ALTURL');
      my $sSid      = $oCGI->param('SID');
      my $sGid      = $oCGI->param('GID');
      my $sCatId      = $oCGI->param('CATID');
      my $sPartnerCode = $oCGI->param('STDPARTNER');
      my $sLanguageCode = $oCGI->param('LANG');
      my $sUsername = $oCGI->param('user');
      my $sPassword = $oCGI->param('pass');
      my $sError    = $oCGI->param('error');
      my $sCookie   = $oCGI->cookie('SST');
```


INSDOCID: <WO_____0133381A1_IA>

```
    my $sessionCookie;
    my $sPromo = '';
    my $sPartnerParams = "";
    my $sCNetString = "";


    ## IF THE SPECIAL C|NET VARIABLES ARE DECLARED
    ## THEN GENERATE THE C|NET STRING
    ## THIS URL IS CALLED FOR ANY FILE DOWNLOADED
    ## FROM C|NET SO THAT THEY CAN CREDIT THE FILE
    ## BEING DOWNLOADED
    if (
        ($sSid != '') &&
        ($sGid != '') &&
        ($sCatId != '')
        ) {


        $sAltURL = "http://beta.cnet.com/downloads/0-" . $sCatId . "-107-"
. $sSid . ".html?tag=ex.dl.xdrive";

        ## IF YOU ARE ON THE TEST SERVERS,
        ## THEN USE C|NET'S TEST URL
        if (
          ($ENV{'HTTP_HOST'} eq 'martini.xdrive.com') ||
          ($ENV{'HTTP_HOST'} eq 'antifreeze.xdrive.com')
          ){

          $sCNetString = "http://abv-sjc2-
export2.cnet.com/downloads/0,10152,0-" .
                          $sCatId .
                        "-110-" .
                        $sSid .
                        ",00.html?gid=" .
                        $sGid .
                        "&tag=ex.dl.xdrivepop.dlcgi." .
                         $sSid;

          ## ELSE, USE THEIR REAL URL
        } else {

          $sCNetString = "http://abv-sjc1-
export2.cnet.com/downloads/0,10152,0-" .
                          $sCatId .
                        "-110-" .
                        $sSid .
                        ",00.html?gid=" .
                        $sGid .
                        "&tag=ex.dl.xdrivepop.dlcgi." .
                         $sSid;

        }

    }


    $sPartnerParams =
"STDPARTNER=$sPartnerCode&LANG=$sLanguageCode&ALTURL=$sAltURL";

    $oCookie->setElement(
                    {
                     'FILEURL'     => $sFileURL,
                     'FILENAME'    => $sFileName,
```


BNSDOCID: <WO ___0133381A1_IA>

```
                        'ALTURL'      => $sAltURL,
                        'STDPARTNER' => $sPartnerCode,
                        'LANG'        => $sLanguageCode,
                        'CATID'       => $sCatId,
                        'SID'         => $sSid,
                        'GID'         => $sGid,
                    ));

    print "Set-Cookie: ". $oCookie->asString();

    my $n = 0;
    my $rv;

    ## Create the database object
    my $oSearch = XDrive::DatabaseO::Search->new($oDBO);

    ##The token for the user session
    my $oToken;

    ## If u/p
    if (defined $sUsername && defined $sPassword)
        {
        ## Auth or fail
        if (xd_auth_password($sUsername, $sPassword, $oDBO))
            {
            $oToken = xd_login($oCGI,$sUsername,$oErr);
            $sessionCookie = xd_set_session_cookie($oCGI,
$sPartnerCode, $sLanguageCode, $sPromo);
            }
        else
            {
            ## Login failed
            my $r = getHTMLContent
                (
                'skip_the_download_login_failed.thtml',
                 $sFileURL,
                $sFileName,
                $sAltURL,
                $sPartnerCode,
                $sLanguageCode
                );

            print "Content-type: text/html\n\n";
            print $r;
            return 1;
        }


    }
        ## error or cookie not defined
    elsif ( (length($sError) > 0) || (length($sCookie) == 0) )
        {
        ## show the login page
        my $r = getHTMLContent('skip_the_download_login.thtml',
                               $sFileURL,
                               $sFileName,
                               $sAltURL,
                        $sPartnerCode,
                        $sLanguageCode
                        );

        print "Content-type: text/html\n\n";
        print $r;
```


INSDOCID: <WO_____0133381A1_IA>

```
            return 1;
            }
      else
            ## cookie defined so authenticate it
            {
            $oToken = xd_security_check($oDBO,$oCGI,$oErr);
            $sessionCookie = xd_set_session_cookie($oCGI, $sPartnerCode,
$sLanguageCode, $sPromo);

            if ($oErr->Occurud)
                  {
                  print $oCGI->redirect("/cgi-
bin/skip_the_download.cgi?&error=expired&$sPartnerParams");
                        return 1;
                  }
            }


      if (!$sFileURL) {
          my $thtml = ($sAltURL != '')?
'skip_the_download_no_alt_error.thtml'
                                    : 'skip_the_download_error.thtml';


          my $sMessage = $oErr->ReturnMessageGivenCode(1220);

          &ThtmlErrorOut($thtml,
                      $sMessage,
                      $sFileURL,
                      $sFileName,
                      $sAltURL,
                      $sPartnerCode,
                      $sLanguageCode
                      );
      }


      ## create the Actions object and download the file
      my $oAction = new XDrive::Client::Actions($oToken,$oCGI);

      ## set the filename and file url
      $oAction->STDFilename($sFileName);
      $oAction->STDURL($sFileURL);

      ## see if file exists. if yes, give em message
      my $bFileExists = $oAction->STDFileExists();

      if ($bFileExists)
            {
            $oDBO->disconnect();
            my $sMessage = $oErr->ReturnMessageGivenCode(1242);

      ErrorOut($sMessage,$sFileURL,$sFileName,$sAltURL,$sPartnerCode,$sLangua
geCode);
            }

      ## Check that the file is not already being downloaded
      if ($oSearch->XDSTDBeingDownloaded($oToken->user,$sFileURL))
            {
            $oDBO->disconnect();
            my $sMessage = $oErr->ReturnMessageGivenCode(1243);
```


BNSDOCID: <WO_____0133381A1_IA>

```
        ErrorOut($sMessage,$sFileURL,$sFileName,$sAltURL,$sPartnerCode,$sLangua
  geCode);
              }

        ## Spool the action to download the file
        my $oTransaction = new XDrive::DatabaseO::Transaction($oDBO);
        my $nSeq = $oTransaction->insertSkipTheDownload
              (
              $oToken->user,
              $sFileName,
              $sFileURL,
              0,
              undef
              );
        $oTransaction->commit;

        ## Insert failed return an error
        if ($nSeq < 0)
              {
              $oDBO->disconnect();
              my $sMessage = $oErr->ReturnMessageGivenCode(1244);

        ErrorOut($sMessage,$sFileURL,$sFileName,$sAltURL,$sPartnerCode,$sLangua
  geCode);
              }

              ## IF THE INSERT DIDN'T FAIL,
              ## AND THE SPECIAL C|NET URL ISN'T NULL
              ## THEN CREDIT C|NET
              elsif ($sCNetString ne '')
              {

                my $oUA = new LWP::UserAgent;
                $oUA->agent("XDriveSTD/0.1 " . $oUA->agent);

                # Create a request
                my $oRequest = new HTTP::Request GET => $sCNetString;

                # Pass request to the user agent and get a response back
                my $oResult = $oUA->request($oRequest);

              }



      print redirect("/cgi-
bin/skip_the_download_status.cgi?seq=$nSeq&$sPartnerParams");
}


sub ErrorOut ()
{
    my $sMessage = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;
```


NSDOCID: <WO_____0133381A1_IA>

```
    my $html = &getHTMLContent('skip_the_download_no_alt_error.thtml',
                           $sFileURL,
                           $sFileName,
                           $sAltURL,
                           $sPartnerCode,
                           $sLanguageCode,
                           $sMessage,
                           );


    print "Content-type: text/html\n\n";
    print $html;
    exit(0);
}


sub ThtmlErrorOut ()
{
    my $thtml = shift;
    my $sMessage = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;

    my $html = &getHTMLContent($thtml,
                           $sFileURL,
                           $sFileName,
                           $sAltURL,
                           $sPartnerCode,
                           $sLanguageCode,
                           $sMessage,
                           );


    print "Content-type: text/html\n\n";
    print $html;
    exit(0);
}

sub getHTMLContent
{
   my $thtmlfile = shift;
   my $sFileURL = shift;
   my $sFileName = shift;
   my $sAltURL = shift;
   my $sPartnerCode = shift;
   my $sLanguageCode = shift;
   my $sMessage = shift;

   my $template = new XDrive::Template
      ({
      'partner_code' => $sPartnerCode,
      'language' => $sLanguageCode,
        'file' => $thtmlfile,
        'tags' =>
            {
            'FILE_URL'  => $sFileURL,
            'FILE_NAME' => $sFileName,
            'ALTURL' => $sAltURL,
            'LANG' => $sLanguageCode,
```


BNSDOCID: <WO 0133381A1 IA>

```
            'STDPARTNER' => $sPartnerCode,
            'message' => $sMessage,
            }
        });

    $template->clear();

    return $template->get;
}

## Create a string which makes the previously created
## cookie expire.

sub empty_cookie
    {
        my $oSelf = shift;
        my $cookie = new CGI::Cookie
        (
        -name    =>  'sst',
        -value   => '',
        -expires => '-1M'
        );
        print header(-cookie=>[$cookie]);
    }
```


NSDOCID: <WO_____0133381A1_IA>

###skip_the_download_status.cgi

```
#!/usr/bin/perl

use lib ($ENV{PERL_XDRIVE_LIB});

use CGI qw(header redirect);
use XDrive::CGI;
use XDrive::Client::Actions;
use XDrive::Client::Security;
use XDrive::DatabaseO;
use XDrive::DatabaseO::Table::SkipDownload;
use XDrive::Template;
use XDrive::Error;
use XDrive::Library;
use Token;

use strict;

use constant TEMP_DIR => XDSTDTempDirectory();

&main;
exit(0);


sub main
{
    ## get parameters
    my $nFileSize;
    my $sTempFile;
    my $sFileName;
    my $sError;
    my $nStatus;
    my $bDone;
    my $percent = 0;
    my $nDownloadedSize = 0;
    my $sURL;
    my $nNow;

    my $oCGI = new CGI();
    my $nSeq = $oCGI->param('seq');
    my $nStart = $oCGI->param('start');
    my $sPartnerCode = $oCGI->param('STDPARTNER');
    my $sLanguageCode = $oCGI->param('LANG');
    my $sAltURL = $oCGI->param('ALTURL');
    my $previous_percent = $oCGI->param('pp');

    ## SET THE CONNECTION_COUNT = 0 IF IT ISN'T PASSED IN
    my $connection_count = ($oCGI->param('cc')) ? $oCGI->param('cc') : 0;

    my $oErr = new XDrive::Error;

    ## get the token and the action object
    my $oDBO = new XDrive::DatabaseO;
    my $oToken = xd_security_check($oDBO,$oCGI,$oErr);
    my $oAction = new XDrive::Client::Actions($oToken,$oCGI);

    my $sPartnerParams =
"STDPARTNER=$sPartnerCode&LANG=$sLanguageCode&ALTURL=$sAltURL";

    if ($oErr->Occurud)
```


SDOCID: <WO_____0133381A1_IA>

```
  {
    print redirect("/cgi-bin/skip_the_download.cgi?$sPartnerParams");
    return;
  }

  ## if the sequence number was passed then get infomation from the
database.
  if (defined $nSeq)
  {
    ## load the information from the datbase
    my $oSkip = XDrive::Database0::Table::SkipDownload->new(undef, $oDBO);
    $oSkip->loadWhere('SEQ',$nSeq);
    $nFileSize = $oSkip->fetchColumn('FILE_SIZE_BYTES');
    $sTempFile = $oSkip->fetchColumn('FILENAME_FOR_TEMP_FILE');
    $sFileName = $oSkip->fetchColumn('FILE_NAME');
    $nStatus   = $oSkip->fetchColumn('IS_ACTIVE');
    $sError    = $oSkip->fetchColumn('ERROR_CODE');
    $sURL      = $oSkip->fetchColumn('FILE_URL');
    $bDone     = $oSkip->fetchColumn('IS_DONE');
  }

  ## XDRIVE.SKIP_THE_DOWNLOAD.IS_ACTIVE lengend
  ##   0 - still in queue
  ##   1 - being downloaded
  ##   2 - on hold


  ## IF CONNECTION_COUTN > 9, THEN GO TO THE FILE NOT FOUND (1220) ERROR
  ## DISPLAY, BUT KEEP TRYING TO DOWNLOAD THE FILE
  if ($connection_count >9) {
    $sError=1220;
  }

  ## IF AN ERROR OCCURRED THEN DISPLAY IT
  ## AND THEN EXIT(0);
  if (defined $sError)
  {
    if ($sError == 1240)
    {
        &DisplayQuotaError('',
                           $sURL,
                           $sFileName,
                           $sAltURL,
                           $sPartnerCode,
                           $sLanguageCode
                           );
    }
    else
    {
        my $oErr = new XDrive::Error;
        $oErr->AddErrorByErrorCode($sError);
        &DisplayError($oErr->Message(),
                      $sURL,
                      $sFileName,
                      $sAltURL,
                      $sPartnerCode,
                      $sLanguageCode
                      );
    }
  }

  ## IF THERE IS NO ERROR, THEN GATHER STATUS
  ## AND DISPLAY TO THE USER
```

```
  else
  {


    ## Get file size, later change to get from a tmp file
    my $sPath = TEMP_DIR."/$sTempFile";


    ## IF STATUS IS LISTED AS DONE IN THE DB,
    ## THEN SHOW THE DONE PAGE
    if ($bDone == 1)
    {
        &DisplayDone('',
                  $sURL,
                  $sFileName,
                  $sAltURL,
                  $sPartnerCode,
                  $sLanguageCode
                  );
    }

    ## ELSE FILE IS NOT DONE,
    ## GATHER MORE DATA AND DISPLAY TO USER
    else
    {


        ## IF STATUS IS NOT ACTIVE, OR THE FILE DOESN'T EXIST
        ## THEN DISPLAY THE CONTACTING SERVER PAGE
        ## REMOVED: || ! -e $sPath
        ## FROM CHECK
        if (  ($nStatus == 0 || -e $sPath)
              &&(!($previous_percent >= 0))
            )
        {

      &DisplayContactServer($nSeq,$sURL,$sFileName,$sAltURL,$sPartnerCode,$sL
anguageCode,$sPartnerParams,$connection_count);
        }

        ## ELSE, GATHER STATUS DATA
        ## AND DISPLAY TO USER
        else
        {

          ## Set the start time in seconds since the epoch if not passed
          ## as parameter
          if (! defined $nStart || $nStart !~ /^\d+$/)
          {
              $nStart = time();
          }


          ## IF NO FILE SIZE HAS BEEN SET IN THE DB
          ## DISPLAY ZERO PERCENTAGES TO THE USER
          if (! defined $nFileSize || $nFileSize == 0)
          {
              $nFileSize = '0';
              $percent   = '0';
              &DisplayStatus($nSeq,$percent,$sFileName,$nFileSize,'',
                        $nStart,'','',

$sAltURL,$sPartnerCode,$sLanguageCode,$sPartnerParams);
```

```
            }

            ## ELSE
            ## * THERE WAS NO ERROR
            ## * THE FILE WAS NOT DONE
            ## * THE FILE EXISTS IN THE TEMPORARY DIRECTORY
            ## * THE DB HAS AN EXPECTED FILE SIZE
            ## SO READ THE FILE, CALCULATE DATA, AND DISPLAY TO USER
            else
            {


                ## These checks are performed before inserting the skip
information
                ## into the database, but we will do it again here to be
safe.

#     my $sError = $oErr->ReturnMessageGivenCode(141);
#     XDErrorToBrowser("",$sError,undef,$oToken);
                ##die "Cannot check $sPath" if $sPath =~ /\.\./;
                ##die "Cannot check $sPath" if $sPath =~ /\/\//;

                ## Get the size of the download object
                my @file_info = stat($sPath);

                ## Conver the downloaded file size into KB
                if ($file_info[7] > 0)
                {
                  $nDownloadedSize = $file_info[7];

                  if ($nFileSize > 0)
                        {
                        $percent = 100 * $nDownloadedSize/$nFileSize;
                        }
                  if ($percent < 0)
                        {
                        $percent = 0;
                        }
                  $percent = sprintf("%.2f",$percent);
                }

                ## IF THE FILE IS GONE NOW, OR SOMEOTHER CONDITION, THE USER
                ## WILL NEVER SEE THE %DONE DROP
                ## USE WHICH EVER IS LARGER, THE PRECENT THAT WE JUST
DISPLAYED
                ## OF THE ONE THAT WE JUST READ FROM THE FILE SYSTEM
                $percent = ($previous_percent > $percent) ? $previous_percent
: $percent;

                ## We have already transfered some of the file, so we can now
                ## estimate the download time.
                $nNow = time();

                my $sInfo;
                my $nElapsedSec  = $nNow - $nStart;
                my $nTransPerSec = 0;

                if ($nElapsedSec)
                {
                  $nTransPerSec = $file_info[7]/$nElapsedSec;
                }

                if ($nTransPerSec > 0)
```

```
                {
                  my $partial  = $percent/100;
                  my ($nSecsRemain, $nMin, $nSecs, $nTransPerSecMB);

                  if ($partial == 0) {
                      $sInfo = '';
                  } else {
                      $nSecsRemain  = ($nElapsedSec/$partial)-$nElapsedSec;
                      $nMin = int($nSecsRemain/60);
                      $nSecs = $nSecsRemain % 60;
                      $nTransPerSecMB = $nTransPerSec/1024;

                  }


                  $sInfo = sprintf(", %d:%02d remaining (%.2f
KB/sec)",$nMin,$nSecs
                                  ,$nTransPerSecMB);
                }

                my $nTrans;

                my $k = "KB";
                my $nDiv = 1024;
                my $nTempSize = $file_info[7] || 0;

                if ($nFileSize > 1024*1024)
                {
                  $k = "MB";
                  $nDiv = 1024*1024;
                }

                if ($nFileSize < 0)
                  {
                  $nFileSize = 0;
                  }

                $nFileSize = sprintf("%.2f",$nFileSize/$nDiv);
                $nTrans = sprintf("%.2f",$nTempSize/$nDiv);

                &DisplayStatus($nSeq,$percent,$sFileName,$nFileSize,'',
                          $nStart,$sInfo,$k,
$sAltURL,$sPartnerCode,$sLanguageCode,$sPartnerParams);

              ## END OF READING DATA FROM SYSTEM AND
              ## DISPLAYING TO USER
              }

            ## END OF NO EXPECTED SIZE IN DB
            ## SHOW USER ZERO PERCENTAGES
            }

        ## END OF FILE MUST BE DONE
        ## SO SHOW A DONE
        }

    ## END OF NO ERROR
    }

    $oDBO->disconnect;
}
```

```
sub DisplayContactServer
{
    my
($nSeq,$sURL,$sFileName,$sAltURL,$sPartnerCode,$sLanguageCode,$sPartnerParams
,$connection_count) = @_;

    my ($sHostname) = $sURL =~ /\/\/([^\/]+)\//;
    $connection_count++;

    ## load the status page
    my $template = new XDrive::Template
      ({
          'partner_code' => $sPartnerCode,
          'language' => $sLanguageCode,
          'file' => 'skip_the_download_contacting.thtml',
          'tags' =>
          {
            'hostname' => $sHostname,
            'continue_to' => "/cgi-
bin/skip_the_download_status.cgi?seq=$nSeq&cc=$connection_count&$sPartnerPara
ms",
            'fileName' => $sFileName,
            'altURL' => $sAltURL,
            }
      });
    print "Content-type: text/html\n\n";
    print $template->get;
}


sub DisplayStatus
{
    my $nSeq = shift;
    my $percent = shift;
    my $filename = shift;
    my $filesize = shift;
    my $transferred = shift;
    my $start = shift;
    my $info = shift;
    my $k = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;
    my $sPartnerParams = shift;

    my $percent_disp;

    if ($filesize <= 0)
    {
      $filesize = 'Unknown';
      $k = ' ';
      $percent_disp = 'Unknown';
      $percent = 0;
    }
    else
    {
      $percent_disp = "$percent%";
    }

    ## load the status page
    my $template = new XDrive::Template
      ({
```

```
            'partner_code' => $sPartnerCode,
            'language' => $sLanguageCode,
            'file' => 'skip_the_download_status.thtml',
            'tags' =>
            {
              'PERCENT_DISP' => $percent_disp,
              'PERCENT' => $percent,
              'FILE_NAME' => $filename,
              'FILE_SIZE' => $filesize,
              'TRANSFERRED' => $transferred,
              'TRANSINFO' => $info,
              'K' => $k,
              'URL' => "/cgi-
bin/skip_the_download_status.cgi?seq=$nSeq&start=$start&pp=$percent&$sPartner
Params",
              'altURL' => $sAltURL
              }
      });

    $template->clear;
    print "Content-type: text/html\n\n";
    print $template->get;
}


sub DisplayDone
{
    my $sMessage = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;

    &ErrorOut('skip_the_download_complete.thtml',
            $sFileURL,
            $sFileName,
            $sAltURL,
            $sPartnerCode,
            $sLanguageCode,
            $sMessage
            );

}


sub DisplayError
{
    my $sError = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;

    my $thtml = ($sAltURL != '')? 'skip_the_download_no_alt_error.thtml'
                                : 'skip_the_download_error.thtml';

    &ErrorOut($thtml,
            $sFileURL,
            $sFileName,
            $sAltURL,
            $sPartnerCode,
```

```
            $sLanguageCode,
            $sError
            );

}


sub DisplayQuotaError
{
    my $sError = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;

    &ErrorOut('skip_the_download_quota_error.thtml',
            $sFileURL,
            $sFileName,
            $sAltURL,
            $sPartnerCode,
            $sLanguageCode,
            $sError
            );

}


sub ErrorOut ()
{
    my $sTHTMLFILE = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;
    my $sMessage = shift;

            my $template = new XDrive::Template
                ({
            'language' => $sLanguageCode,
                'partner_code' => $sPartnerCode,
                'file' => $sTHTMLFILE,
                'tags' =>
            {
                'message' => $sMessage,
                'altURL' => $sAltURL,
                'fileURL' => $sFileURL,
                'FILE_NAME' => $sFileName,
                'LANG' => $sLanguageCode,
                'ALTURL' => $sAltURL,
                'STDPARTNER' => $sPartnerCode,
            }
          });

   my $html = $template->get;

   print "Content-type: text/html\n\n";
   print $html;
```


NSDOCID: <WO_____0133381A1_IA>

```
            $sLanguageCode,
            $sError
            );

}


sub DisplayQuotaError
{
    my $sError = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;

    &ErrorOut('skip_the_download_quota_error.thtml',
            $sFileURL,
            $sFileName,
            $sAltURL,
            $sPartnerCode,
            $sLanguageCode,
            $sError
            );

}


sub ErrorOut ()
{
    my $sTHTMLFILE = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;
    my $sMessage = shift;

            my $template = new XDrive::Template
                ({
            'language' => $sLanguageCode,
                'partner_code' => $sPartnerCode,
                'file' => $sTHTMLFILE,
                'tags' =>
            {
                'message' => $sMessage,
                'altURL' => $sAltURL,
                'fileURL' => $sFileURL,
                'FILE_NAME' => $sFileName,
                'LANG' => $sLanguageCode,
                'ALTURL' => $sAltURL,
                'STDPARTNER' => $sPartnerCode,
            }
          });

    my $html = $template->get;

    print "Content-type: text/html\n\n";
    print $html;
```

```
        my $sUser_name = $oUserInfo->fetchColumn('NAME_FIRST') . " " .
 $oUserInfo->fetchColumn('NAME_LAST');
        my $sUser_email = $oUserInfo->fetchColumn('EMAIL_ADDRESS');
        $oUserInfo->finish();
          $oUserInfo->disconnect();

        if ($sAddress)
              {
              &send_mail($sName, $sAddress, $sUser_name, $sUser_email,
 $nUser_ID, $oCGI, $oToken, $oErr, $oCookie);
              &display_thank_you($oCGI,$oCookie);
              }
        else
              {
              &display_form($oCGI,$oCookie);
              }
        }


 sub send_mail {
        my ($sName, $sAddress, $sUser_name, $sUser_email, $nUser_ID, $oCGI,
 $oToken, $oErr, $oCookie) = @_;

        ## send out email for each friend only if form is filled out
        ## get number of friend fields

        my $numFriends = $oCGI->param("numFriends");
        for (my $i=1; $i<=$numFriends; $i++)
              {
              $sAddress = $oCGI->param('friends_email' . $i);
              $sName = $oCGI->param('friends_name' . $i);
              my $sMessage = &get_message($sUser_name, $nUser_ID, $sName,
 $sUser_name,$oCookie);

              ##only send the mail if the email address is filled out
              if ($sAddress)
              {
                  my %toXdrive =
                  (
                  To      => "$sName <$sAddress>",
                  Bcc     => '',
                  From    => "$sUser_email",
                  Message => $sMessage,
                  Subject => "Check out X:drive!",
                  );

                  unless (sendmail %toXdrive)
                  {
                  warn "## Mail error ".$Mail::Sendmail::error;
                  if ($Mail::Sendmail::error =~ /451/)
                        {
                    my $sError = $oErr->ReturnMessageGivenCode(1310);
                          XDErrorToBrowser("",$sError,undef,$oToken);
                          }
            else
                  {
                      my $sError = $oErr->ReturnMessageGivenCode(1311);

 XDErrorToBrowser('tell_a_friend__error.thtml',$sError,undef,$oToken);
                  }
                  exit(1);
                }
            }
```

```
    }


}


sub get_formfield {
    my ($sNum,$oCookie) = @_;

    my $oFormField = new XDrive::Template
      ({
      'language'     => $oCookie->getElement('language'),
      'partner_code' => $oCookie->getElement('partner'),
      });
    $oFormField->load('tell_form_fields.thtml');

    $oFormField->tags
        ({
        'number' => $sNum
        });

    return $oFormField->get;
}


sub get_message {
    my ($sUser_name, $nUser_ID, $sName, $sUserEmail,$oCookie) = @_;

    my $oMessage = new XDrive::Template
      ({
      'language'     => $oCookie->getElement('language'),
      'partner_code' => $oCookie->getElement('partner'),
      });
    $oMessage->load('tell_a_friend__message.thtml');

    $oMessage->tags
        ({
        'user_name' => $sUser_name,
        'nUser_ID' => $nUser_ID,
        'user_email' => $sUserEmail,
        'friend_name' => $sName
        });

    return $oMessage->get;
}

sub display_form {
    my $oCGI = shift;
    my $oCookie = shift;
    my $oForm = new XDrive::Template
      ({
      'language'     => $oCookie->getElement('language'),
      'partner_code' => $oCookie->getElement('partner'),
      });
    $oForm->load('tell_a_friend.thtml');
    my $numFriends = $oCGI->param("numFriends");

    ##construct the html for multiple input fields
    my $inputFields='';

    for (my $i=1; $i<=$numFriends ; $i++)
    {
      $inputFields = $inputFields . &get_formfield($i,$oCookie);
```

```
    }

    $oForm->tags
        ({
      'friendsToTell' => $inputFields,
      'numFriends' => $numFriends,
        });
    print $oCGI->header, $oForm->get;
    exit(0);
}

sub display_thank_you {
    my $oCGI = shift;
    my $oCookie = shift;
    my $oForm = new XDrive::Template
      ({
      'language'     => $oCookie->getElement('language'),
      'partner_code' => $oCookie->getElement('partner'),
      });
    $oForm->load('tell_a_friend__t_y.thtml');
    print $oCGI->header, $oForm->get;
    exit(0);
}
```

###web_unauthorized.cgi

```
#!/usr/bin/perl
# Written by Martin Hald <mhald@uci.edu> on Sat Feb 13, 1999
#
# Program for showing unauthorized information and allowing the users to
# re-login and possibly showing them a "forgot your password?" link.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI qw(header param);
use CGI::Carp qw(fatalsToBrowser);
# use XDrive::CGI qw(:MAIN);
use XDrive::Client::Registration;
use XDrive::Template;
use XDrive::Error;

exit &main;

sub main
      {
      my $oCGI = CGI->new();

      my $oLayout = new XDrive::Template;
      my $oContent = new XDrive::Template;
      my $oNavigation = new XDrive::Template;

      $oLayout->partner('xdrv');
      $oContent->partner('xdrv');
      $oNavigation->partner('xdrv');

      $oLayout->load('layout.thtml');
      $oNavigation->load('front_nav.thtml');

      ## Get the error key
      my $sError = $oCGI->param('error');

      ##now get the error message associated with that error
      my $oErr = new XDrive::Error;
      my $message = $oErr->ReturnMessageGivenCode($sError);

      ## Load the required template HTML files.
      my $oForm = new XDrive::Template;
      $oForm->partner('xdrv');
      $oForm->load("front_nav.thtml");
      $oContent->load("unauthorized.thtml");

      ## Update the layout
      $oLayout->tags
            ({
            'header_graphic' => 'header_denied.gif'
            });

      ## Update the content
      $oContent->tags
            ({
            'error_message' => $message
            });
      $oContent->clear();
```


NSDOCID: <WO_____0133381A1_IA>

```
    ## Print out the HTML and exit
    $oLayout->tags
          ({
          'content' => $oContent->get,
          'navigation' => $oNavigation->get,
          'title' => 'Authorization Denied'
          });
    print header(), $oLayout->get;

    return 0;
}
```

Windows Client Code

// Module: dlgShareAFile.h 1
// Module: dlgShareAFile.h 3
// Module: xdBase64.cpp 5
// Module: xdBase64.h 9
// Module: xdGlobals.h 10
// Module: xdParseDate.h 13
// Module: xdRegistry.h 14
// Module: xdTokens.h 16
// Module: xdTools.h 17
// Module: xdEngine.h 20
// Module: tdimsgtbl.h 22
// Module: tdisock.h 24
// Module: xdFileIO.cpp 41
// Module: xdDebugger.cpp 45

```
//
// Module: dlgShareAFile.h
// Subsystem: KnoWare Internet Engine (kwEngine.dll)
// Contents: Declaration module for the dlgShareAFile class.
//
// --------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// --------------------------------------------------------------------
// --------------------------------------------------------------------
//

#include "stdafx.h"
#include <xdGlobals.h>

#ifndef _VXD_SOURCE_
#include "resource.h"
#endif
#include "dlgShareAFile.h"

#ifdef _DEBUG
#undef THIS_FILE
static char THIS_FILE[] = __FILE__;
#endif

// --------------------------------------------------------------------
// Implementation
// --------------------------------------------------------------------
BEGIN_MESSAGE_MAP(dlgShareAFile, CDialog)
        //{{AFX_MSG_MAP(dlgShareAFile)
        //}}AFX_MSG_MAP
END_MESSAGE_MAP()

// --------------------------------------------------------------------
// Method: dlgShareAFile()
// Purpose: Standard constructor
//
dlgShareAFile::dlgShareAFile(CWnd* pParent /*=NULL*/)
        : CDialog(dlgShareAFile::IDD, pParent)
{
        //{{AFX_DATA_INIT(dlgShareAFile)
        m_sFileName = szEMPTY;
        m_sFileDescription = szEMPTY;
        m_sEmailMessage = szEMPTY;
        m_sEmailSubject = szEMPTY;
        m_sEmail0 = szEMPTY;
        m_sEmail1 = szEMPTY;
        m_sEmail2 = szEMPTY;
        m_sEmail3 = szEMPTY;
        m_sEmail4 = szEMPTY;
        //}}AFX_DATA_INIT
} // End of dlgShareAFile()

// --------------------------------------------------------------------
// Method: DoDataExchange()
// Purpose: Standard data exchange handler
//
void dlgShareAFile::DoDataExchange(CDataExchange* pDX)
{
```

```
        CDialog::DoDataExchange(pDX);
        //{{AFX_DATA_MAP(dlgShareAFile)
        DDX_Text(pDX, IDC_SHARE_FILENAME, m_sFileName);
        DDX_Text(pDX, IDC_SHARE_FILEDESC, m_sFileDescription);
        DDX_Text(pDX, IDC_SHARE_EMAILMSG, m_sEmailMessage);
        DDX_Text(pDX, IDC_SHARE_EMAILSUB, m_sEmailSubject);
        DDX_Text(pDX, IDC_SHARE_EMAIL1, m_sEmail0);
        DDX_Text(pDX, IDC_SHARE_EMAIL2, m_sEmail1);
        DDX_Text(pDX, IDC_SHARE_EMAIL3, m_sEmail2);
        DDX_Text(pDX, IDC_SHARE_EMAIL4, m_sEmail3);
        DDX_Text(pDX, IDC_SHARE_EMAIL5, m_sEmail4);
        //}}AFX_DATA_MAP
} // End of DoDataExchange()

// ------------------------------------------------------------
// Method: OnInitDialog()
// Purpose: Called to initialize the contents of the dialog
//
BOOL dlgShareAFile::OnInitDialog()
{
        CDialog::OnInitDialog();

        UpdateData(FALSE);
        return TRUE;  // return TRUE unless you set the focus to a control
                // EXCEPTION: OCX Property Pages should return FALSE
} // End of OnInitDialog()

// ------------------------------------------------------------
// Method: OnOK()
// Purpose: Called to close out the dialog.
//
void dlgShareAFile::OnOK()
{
        UpdateData(TRUE);
        CDialog::OnOK();
} // End of OnOK()
```


INSDOCID: <WO 01333381A1 1A>

```
//
// Module: dlgShareAFile.h
// Subsystem: KnoWare Internet Engine (kwEngine.dll)
// Contents: Declaration module for the dlgShareAFile class.
//
// --------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// --------------------------------------------------------------------
// --------------------------------------------------------------------
//
#if !defined(_INC_DLGSHAREAFILE_H_)
#define _INC_DLGSHAREAFILE_H_

#if _MSC_VER > 1000
#pragma once
#endif // _MSC_VER > 1000

#ifndef _VXD_SOURCE_
#include "resource.h"
#endif

#ifndef _VXD_SOURCE_

// --------------------------------------------------------------------
//      dlgShareAFile dialog class
//
class dlgShareAFile : public CDialog
{
public:
        dlgShareAFile(CWnd* pParent = NULL);   // standard constructor

        //{{AFX_DATA(dlgShareAFile)
        enum { IDD = IDD_SHARE };
        CString m_sFileName;
        CString m_sFileDescription;
        CString m_sEmailMessage;
        CString m_sEmailSubject;
        CString m_sEmail0;
        CString m_sEmail1;
        CString m_sEmail2;
        CString m_sEmail3;
        CString m_sEmail4;
        //}}AFX_DATA

        //{{AFX_VIRTUAL(dlgShareAFile)
        protected:
        virtual void DoDataExchange(CDataExchange* pDX);    // DDX/DDV support
        //}}AFX_VIRTUAL

protected:
        //{{AFX_MSG(dlgShareAFile)
        virtual BOOL OnInitDialog();
        virtual void OnOK();
        //}}AFX_MSG
        DECLARE_MESSAGE_MAP()
};

//{{AFX_INSERT_LOCATION}}
```

```
// Microsoft Visual C++ will insert additional declarations immediately before the previous line.

#endif

#endif // !defined(_INC_DLGSHAREAFILE_H_)
```

```
//
// Module: xdBase64.cpp
// Subsystem: X:drive Client Engine (xdEngine.dll)
// Contents: Implementation module for the xdBase64 class
//
// ------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ------------------------------------------------------------------
// ------------------------------------------------------------------
//
#include "stdafx.h"
#include "xdBase64.h"

#ifdef _DEBUG
#undef THIS_FILE
static char THIS_FILE[]=__FILE__;
#endif
#ifdef _VXD_SOURCE_
#include <xdEngine.h>
#define TRACE  DEBUG_DPRINTF
#endif

// Static Member Initializers
//

// The 7-bit alphabet used to encode binary information
CString xdBase64::m_sBase64Alphabet =
_T( "ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789+/" );

int xdBase64::m_nMask[] = { 0, 1, 3, 7, 15, 31, 63, 127, 255 };

// ------------------------------------------------------------------
// Method: xdBase64()
// Purpose: Standard Constructor
//
xdBase64::xdBase64 ( void )
{
} // End of xdBase64()

// ------------------------------------------------------------------
// Method: ~xdBase64()
// Purpose: Standard destructor
//
xdBase64::~xdBase64()
{
} // End of ~xdBase64()

// ------------------------------------------------------------------
// Method: Encode()
// Purpose: Encodes a string
//
CString xdBase64::Encode(LPCTSTR szEncoding, int nSize)
{
        CString sOutput = _T( "" );
        int nNumBits = 6;
        UINT nDigit;
        int lp = 0;
```

```
        ASSERT( szEncoding != NULL );
        if( szEncoding == NULL )
                return sOutput;
        m_szInput = szEncoding;
        m_nInputSize = nSize;

        m_nBitsRemaining = 0;
        nDigit = read_bits( nNumBits, &nNumBits, lp );
        while( nNumBits > 0 )
        {
                sOutput += m_sBase64Alphabet[ (int)nDigit ];
                nDigit = read_bits( nNumBits, &nNumBits, lp );
        }
        // Pad with '=' as per RFC 1521
        while( sOutput.GetLength() % 4 != 0 )
        {
                sOutput += '=';
        }
        return sOutput;
} // End of Encode()

// ----------------------------------------------------------------------
// Method: Decode()
// Purpose: Decodes data
//  Notes: The size of the output buffer must not be less than 3/4 the
//                      size of the input buffer. For simplicity, make them the same
//                      size.
//
int xdBase64::Decode(LPCTSTR szDecoding, LPTSTR szOutput)
{
        CString sInput;
  int c, lp =0;
        int nDigit;
  CString       strDecode;
        int* pDecode = (int*)strDecode.GetBuffer(256*sizeof(int));

        ASSERT( szDecoding != NULL );
        ASSERT( szOutput != NULL );
        if( szOutput == NULL )
                return 0;
        if( szDecoding == NULL )
                return 0;
        sInput = szDecoding;
        if( sInput.GetLength() == 0 )
                return 0;

        // Build Decode Table
        //
        for( int i = 0; i < 256; i++ )
                pDecode[i] = -2; // Illegal digit
        for( i=0; i < 64; i++ )
        {
                pDecode[ m_sBase64Alphabet[ i ] ] = i;
                pDecode[ m_sBase64Alphabet[ i ] | 0x80 ] = i; // Ignore 8th bit
                pDecode[ '=' ] = -1;
                pDecode[ '=' | 0x80 ] = -1; // Ignore MIME padding char
 }

        // Clear the output buffer
        memset( szOutput, 0, sInput.GetLength() + 1 );

        // Decode the Input
```

```
        //
        for( lp = 0, i = 0; lp < sInput.GetLength(); lp++ )
        {
                c = sInput[ lp ];
                nDigit = pDecode[ c & 0x7F ];
                if( nDigit < -1 )
                {
                        return 0;
                }
                else if( nDigit >= 0 )
                        // i (index into output) is incremented by write_bits()
                        write_bits( nDigit & 0x3F, 6, szOutput, i );
    }
        return i;
} // End of Decode()

// ----------------------------------------------------------------------
// Method: read_bits()
// Purpose: dunno
//
UINT xdBase64::read_bits(int nNumBits, int * pBitsRead, int& lp)
{
  ULONG lScratch;
  while( ( m_nBitsRemaining < nNumBits ) &&
                ( lp < m_nInputSize ) )
        {
                int c = m_szInput[ lp++ ];
    m_lBitStorage <<= 8;
    m_lBitStorage |= (c & 0xff);
                m_nBitsRemaining += 8;
  }
  if( m_nBitsRemaining < nNumBits )
        {
                lScratch = m_lBitStorage << ( nNumBits - m_nBitsRemaining );
                *pBitsRead = m_nBitsRemaining;
                m_nBitsRemaining = 0;
  }
        else
        {
                lScratch = m_lBitStorage >> ( m_nBitsRemaining - nNumBits );
                *pBitsRead = nNumBits;
                m_nBitsRemaining -= nNumBits;
  }
  return (UINT)lScratch & m_nMask[nNumBits];
} // End of read_bits()

// ----------------------------------------------------------------------
// Method: write_bits()
// Purpose: dunno
//
void xdBase64::write_bits ( UINT nBits, int nNumBits, LPTSTR szOutput, int& i )
{
        UINT nScratch;

        m_lBitStorage = (m_lBitStorage << nNumBits) | nBits;
        m_nBitsRemaining += nNumBits;
        while( m_nBitsRemaining > 7 )
        {
                nScratch = m_lBitStorage >> (m_nBitsRemaining - 8);
                szOutput[ i++ ] = (TCHAR)(nScratch & 0xFF);
                m_nBitsRemaining -= 8;
        }
```

```
} // End of write_bits()
```

```
//
// Module: xdBase64.h
// Subsystem: X:drive Client Engine (xdEngine.dll)
// Contents: Declaration module for the xdBase64 class.
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//
#if !defined(_INC_XDBASE64_H_)
#define _INC_XDBASE64_H_

#ifdef _VXD_SOURCE_
        #include <xdCString.h>
#endif

#if _MSC_VER >= 1000
#pragma once
#endif // _MSC_VER >= 1000

// ---------------------------------------------------------------------
// xdBase64 encoder class
//
class xdBase64
{
public:
        xdBase64 ( void );
        virtual ~xdBase64 ( void );

        virtual int             Decode ( LPCTSTR szDecoding, LPTSTR szOutput );
        virtual CString Encode ( LPCTSTR szEncoding, int nSize );

protected:
        void            write_bits ( UINT nBits, int nNumBts, LPTSTR szOutput, int& lp );
        UINT            read_bits ( int nNumBits, int* pBitsRead, int& lp );

protected:
        int                     m_nInputSize;
        int                     m_nBitsRemaining;
        ULONG           m_lBitStorage;
        LPCTSTR         m_szInput;
        static int m_nMask[];
        static CString  m_sBase64Alphabet;
};

#endif // !defined(_INC_XDBASE64_H_)
```

/

// Module: xdGlobals.h

```
// Subsystem: X:drive
// Contents: Global definitions used throughout the system
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//
#ifndef _INC_XDGLOBALS_H_
#define _INC_XDGLOBALS_H_

#ifdef _VXD_SOURCE_

        //
        // This HodgePodge helps us to be able to compile all of our code
        // under Ring-3 and Ring-0 without too much modification.
        //
        #ifndef USE_NDIS
                #define USE_NDIS
        #endif

        #include <vtoolscp.h>                   // VToolsD main header file

        #ifndef LPCTSTR
                typedef char                    TCHAR;
                typedef unsigned char   _TUCHAR;
                typedef const TCHAR*    LPCTSTR;
                typedef TCHAR*                  LPTSTR;
                typedef unsigned char   BYTE;
                typedef BYTE*                   LPBYTE;
                typedef DSKTLSYSTEMTIME SYSTEMTIME;
                typedef HANDLE                          HINSTANCE;
                #define _T(x)                   (x)
        #endif

        #ifndef BASED_CODE
                #define BASED_CODE
        #endif

        #ifndef INVALID_HANDLE_VALUE
                #define INVALID_HANDLE_VALUE (HANDLE)-1
        #endif

        #define _tcsstr         strstr          // Standard unicode mappings
        #define _tcslen         strlen
        #define _tcscpy         strcpy
        #define _tcsrchr  strrchr
        #define _tcscat         strcat
        #define _ttoi           atoi
        #define _ttol           atol
        #define _tcsrev         strrev
        #define _tcschr         strchr
        #define _tcsncpy strncpy
        #define _tcspbrk strpbrk
        #define _stprintf sprintf
        #define _tcslwr         strlwr
```


3NSDOCID: <WO_ 0133381A1 IA>

```
        #define _tcsupr         strupr
        #define _tcsicmp        stricmp
        #define _tcscmp         strcmp
        #define _tcscoll  strcmp
        #define _istdigit  isdigit
//      #define ASSERT Assert
        typedef HANDLE          HWND;
#endif

// ------------------------------------------------------------------
// Setup a whole bunch of constants that we can use throughout the systems
//
#define  chNL                   _T('\n')
#define chCOMMA                         _T(',')
#define chDOSSLASH              _T('\\')
#define chUNIXSLASH             _T('/')
#define chQUOTE                         _T('\'')
#define chDQUOTE                _T('\"')
#define chPERIOD                _T('.')
#define chBAR                   _T('|')
#define chTAB                   _T('\t')
#define chCR                    _T('\r')
#define chSPACE                         _T(' ')
#define chCOLON                         _T(':')
#define chSEMICOLON             _T(';')
#define chDASH                  _T('-')
#define chPLUS                  _T('+')
#define chPERCENT               _T('%')
#define chOPENBRACKET           _T('[')
#define chCLOSEBRACKET          _T(']')
#define chNUL                   _T('\0')
#define chZERO                  _T('0')
#define chONE                   _T('1')
#define chTWO                   _T('2')
#define chTHREE                         _T('3')
#define chFOUR                  _T('4')
#define chFIVE                  _T('5')
#define chSIX                   _T('6')
#define chSEVEN                         _T('7')
#define chEIGHT                 _T('8')
#define chNINE                  _T('9')
#define chOPENPAREN             _T('(')
#define chCLOSEPAREN _T(')')
#define chAT                    _T('@')

#define szNL                    _T("\n")
#define szCOMMA                         _T(",")
#define szDOSSLASH              _T("\\")
#define szUNIXSLASH             _T("/")
#define szQUOTE                         _T("'")
#define szDQUOTE                _T("\"")
#define szPERIOD                _T(".")
#define szBAR                   _T("|")
#define szTAB                   _T("\t")
#define szCR                    _T("\r")
#define szSPACE                 _T(" ")
#define szCOLON                         _T(":")
#define szSEMICOLON             _T(";")
#define szDASH                  _T("-")
#define szPLUS                  _T("+")
#define szOPENBRACKET           _T("[")
#define szCLOSEBRACKET          _T("]")
```

```
#define szAT                    _T("@")
#define szEMPTY                 _T("")
#define szCURRENTDIR _T(".")
#define szPARENTDIR             _T("..")
#define szFTP_DOT               _T("ftp.")
#define szFTP_SLASH             _T("ftp://")
#define szOPENPAREN             _T("(")
#define szCLOSEPAREN _T(")")

#define  XD_CACHE_BASEDIR  _T("xdcache")
#define XD_LOGFILE_NP           _T("xdrive.log")
#define XD_LOGFILE_VXD          _T("xdrivevxd.log")

// ------------------------------------------------------------------
// We need to define the scope of values which will be used in the system.
// They are defined here since we need to read/write these to the registry.
//

//
// General defines
//
#define XD_LEN_32                       32
#define XD_LEN_64                       64
#define XD_LEN_128                      128
#define  XD_LEN_256                     256
#define XD_LEN_512                      512
#define XD_LEN_1024                     1024
#define XD_LEN_2048                     2048

//
// these program IDs are also the 1st two digits of the registration number
//
#define XD_PROGID_XDRIVE 0x53       // {DB2112AD-0000-0000-0053-000004281965}


//
// IN will generate a directory listing and the local file that contains
// that information will have an extension of `.fnd`. For example, if
// IN/FND does a directory listing of ftp.microsoft.com/softlib/mslfiles,
// it will place the raw directory listing in the in the local IN cache
// directory (which is currently defined as hanging off of the same
// directory where IN is located) as
//
// c:\xdCache\ftp.microsoft.com\root.softlib.mslfiles.ls
//
// and the parsed FND formatted data will be placed into
//
// c:\xdCache\ftp.microsoft.com\root.softlib.mslfiles.fnd
//
// the .fnd file is parsed out to produce the information returned as a
// result of the FINDFIRST()/FINDNEXT() calls to the NP.
//
#define XD_FILEEXT_LS               _T(".ls")
#define  XD_FILEEXT_XDR             _T(".fnd")
//
// Here is our Network Provider Name
//
#define  XD_PROVIDER_NAME               _T("Xdrive")
#define XD_PROVIDER_NETID               0x00120000

#endif // _INC_XDGLOBALS_H_
```

```
//
// Module: xdParseDate.h
// Subsystem: X:drive Tools Library (xdTools.dll)
// Contents: Declaration module for the CParseDate utility class
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//
#ifndef _INC_XDPARSEDATE_H_
#define _INC_XDPARSEDATE_H_

#include <xdTokens.h>

class XDTOOLS_PUBLIC CParseDate
{
public:
        CParseDate ( void );
        ~CParseDate ( void );

        BOOL        Parse ( LPCTSTR s );

        int                 m_iYear;
        int                 m_iMonth;
        int                 m_iDay;
        int                 m_iHour;
        int                 m_iMinute;
        int                 m_iSecond;
        TCHAR       m_szDate[64];
        TCHAR       m_szTime[32];
        TCHAR       m_szOrig[64];

private:
        BOOL        isNUM ( LPCTSTR s );
        BOOL        isDOW ( LPCTSTR s );
        xdTokens    m_tokens;
};
#endif
```

```
//
// Module: xdRegistry.h
// Subsystem: X:drive Tools Library (xdTools.dll)
// Contents: Declaration module for the xdRegistry utility class
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//
#ifndef _INC_XDREGISTRY_H_
#define _INC_XDREGISTRY_H_

#if _MSC_VER >= 1000
#pragma once
#endif // _MSC_VER >= 1000

#include <xdGlobals.h>          // X:drive system wide globals
#include <xdTools.h>            // X:drive Tools Related

// ---------------------------------------------------------------------
// xdRegistry
//  the registry class encapsulates the regitry functions. You must open
// at least a hive in the constructor. then you can optionally open
// a subkey & read/write information to the registry. All methods will return
//,true upon successful completion. false will be returned if an error
// has occurred.
//
class XDTOOLS_PUBLIC xdRegistry
{
public:
   xdRegistry();
   ~xdRegistry();

//
// public interface
//
public:
   BOOL     RegOpenRead ( HKEY hHive, LPCTSTR szSubKey );
   BOOL     RegOpenWrite ( HKEY hHive, LPCTSTR szSubKey );
   BOOL     RegClose ( void );
        BOOL            RegDeleteKey ( HKEY hHive, LPCTSTR szSubKey );
        BOOL            RegDeleteValue ( LPCTSTR szVal );

   BOOL                 RegEnumKey ( int i, LPCTSTR szKeyName, UINT uiLenWithNull );
   BOOL                 RegEnumVal ( int i, LPCTSTR szValName, UINT uiLenWithNull, LPCTSTR
szValData, UINT uiDataLenWithNull );
        BOOL            RegEnumStr ( int i, LPCTSTR szVal, UINT uiLenWithNull );
        BOOL      RegGetStr ( LPCTSTR sName, LPCTSTR szVal, UINT uiLenWithNull );
   BOOL     RegPutStr ( LPCTSTR sName, LPCTSTR szVal );
        BOOL            RegPutBin ( LPCTSTR sName, BYTE* pBuffer, UINT uiLen );

   BOOL     RegGetNum ( LPCTSTR sName, BOOL& bVal );
   BOOL     RegGetNum ( LPCTSTR sName, WORD& wVal );
   BOOL     RegGetNum ( LPCTSTR sName, DWORD& dwVal );
   BOOL     RegGetNum ( LPCTSTR sName, UINT& uiVal );

   BOOL     RegPutNum ( LPCTSTR sName, DWORD dwVal );
```

```
        LONG            RegGetLastError ( void );

private:
   HKEY      m_hKey;       // the current open hive
   LONG            m_lRetCode;    // the last return code
}; // End of xdRegistry

#endif // _INC_XDREGISTRY_H_
```

```
//
// Module: xdTokens.h
// Subsystem: X:drive Tools Library (xdTools.dll)
// Contents: Declaration module for xdTokens utility class
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//
#ifndef _INC_XDTOKENS_H_
#define _INC_XDTOKENS_H_

#if _MSC_VER >= 1000
#pragma once
#endif // _MSC_VER >= 1000

#include <xdGlobals.h>          // X:drive system wide globals
#include <xdTools.h>            // X:drive Tools Related

#define XD_MAX_TOKENS    1024

//---------------------------------------------------------------------
// xdTokens
//      This class is a big worker class. its used to parse strings into
// tokens or substrings. Strings are parsed by supplying a string of
// characters which will be used to parse out the string.
//

class XDTOOLS_PUBLIC xdTokens
{
public:
   xdTokens(LPCTSTR pTokens = NULL);
   ~xdTokens();

//
// Public Interface
//
public:
        int             Parse(int iNumToParse, LPCTSTR pString, LPCTSTR pTokens=NULL);
        int             Parse(LPCTSTR pString, LPCTSTR pTokens=NULL);
        LPCTSTR         operator[](int iIndex);

//
// Private Members
//
private:
        LPCTSTR         *m_pTok;
        int             m_iNumParsed;
        LPTSTR          m_szWorkString;
        LPTSTR          m_szTokens;
        LPTSTR          m_pWorkString;
}; // End of xdTokens

#endif // _INC_XDTOKENS_H_
```

```
//
// Module: xdTools.h
// Subsystem: X:drive Tools Library (xdTools.dll)
// Contents: Main header file for the xdTools library
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//
#ifndef _INC_XDTOOLS_H_
#define _INC_XDTOOLS_H_

#if _MSC_VER >= 1000
#pragma once
#endif // _MSC_VER >= 1000

#include <xdGlobals.h>              // X:drive system wide globals
#ifdef _VXD_SOURCE_
#include <xdCString.h>
#endif
#pragma warning (disable : 4100)
#pragma warning (disable : 4201)

//
// The following code block will insure the proper resolution of any
// API functions (and classes) which are exposed from the XDTOOLS library.
// When compiling the XDTOOLS library source code, make sure that the
// following #define is defined in the project settings (both debug & release).
// This will cause any classes and/or API functions defined as to
// be exported to the LIB file. If you are USING the library by linking to
// the XDTOOLS.LIB or XDTOOLSD.LIB import libraries, then ignore the
// following #define's for
//
#ifdef _XDTOOLS_SOURCE_
        #define XDTOOLS_PUBLIC __declspec( dllexport )
#else
        #define XDTOOLS_PUBLIC // __declspec( dllimport )
#endif // _XDTOOLS_SOURCE_

//
// If we are debugging & we trap an exception, we will display it
// in a message box, otherwise in release mode, we wont.
//
#ifdef _DEBUG
        #define XDTRACE(x) AfxMessageBox(x)
#else
        #define XDTRACE(x) TRACE0(x)
#endif

// ---------------------------------------------------------------------
// XDDATE API (Date Functions)
//
XDTOOLS_PUBLIC int XDDATE_MonthNum ( LPTSTR szMonth );

// ---------------------------------------------------------------------
// XDSTR API (String Functions)
//
```

```
XDTOOLS_PUBLIC    LPTSTR        XDSTR_Squish ( LPTSTR p );
XDTOOLS_PUBLIC    LPTSTR        XDSTR_StripChar ( LPTSTR p, TCHAR c );
XDTOOLS_PUBLIC    LPTSTR        XDSTR_DirSlashAdd ( LPTSTR sz, TCHAR c );
XDTOOLS_PUBLIC    LPTSTR        XDSTR_DirSlashRemove ( LPTSTR sz, TCHAR c );
XDTOOLS_PUBLIC    LPTSTR        XDSTR_TrimRight ( LPTSTR );
XDTOOLS_PUBLIC    LPTSTR        XDSTR_TrimLeft ( LPTSTR );
XDTOOLS_PUBLIC    LPTSTR        XDSTR_Trim ( LPTSTR );
XDTOOLS_PUBLIC    BOOL   XDAPI_CreatePath ( LPCTSTR ); // calls CreateDirectory() to make a path.

// ----------------------------------------------------------------
// Stuff for messge boxes
//
#ifndef _VXD_SOURCE_
        int             XDTOOLS_PUBLIC XD_MSG ( LPCTSTR szText, UINT uiMsgFlags );
        int             XDTOOLS_PUBLIC XD_QUESTION ( LPCTSTR szText, UINT uiMsgFlags );
        LPCTSTR XDTOOLS_PUBLIC XD_TEXT ( HINSTANCE h, UINT uiResId ); // LOADS A
RESOURCE!
        BOOL   XD_DoHelp ( LPHELPINFO );
        void   XD_DoHelpContext ( CWnd* );
#endif

//
// the calling object needs to supply the resource
// handle for loading the string. So set up a stupid macro
// that will automatically supply this!
//
#define XD_LOADSTRING(x)    XD_TEXT(AfxGetResourceHandle(),(x))

//
// DEBUGGING STUFF
//
#define CATCH_MSG _T("Caught Exception in File %s, Line %d\n\n")
#ifdef _VXD_SOURCE_
        #define XDCATCH dprintf(CATCH_MSG, _T(__FILE__), __LINE__ )
#else
        #define  XDCATCH {    CString s; s.Format(CATCH_MSG, _T(__FILE__), __LINE__ );
AfxMessageBox(s); }
#endif

//
// Ring 0 File I/O
//
#ifdef _VXD_SOURCE_
#define GENERIC_READ                    (0x80000000) /* from WINNT.H */
#define GENERIC_WRITE                   (0x40000000) /* from WINNT.H */
#define CREATE_NEW                      1
#define CREATE_ALWAYS                   2
#define OPEN_EXISTING                   3
#define OPEN_ALWAYS                     4
#define TRUNCATE_EXISTING           5
#define FILE_SHARE_READ                 0x00000001
#define FILE_SHARE_WRITE            0x00000002
#define FILE_SHARE_DELETE           0x00000004      // not supported

HANDLE CreateFile ( LPCTSTR lpFileName,     // pointer to name of the file
                                    DWORD dwDesiredAccess,    // access (read-write) mode
                                    DWORD dwShareMode,        // share mode
                                    void* lpSecAtt,                         // pointer to security
attributes
                                    DWORD dwCreateFlags,          // how to create
                                    DWORD dwFlagsAndAttributes,   // file attributes
                                    HANDLE);
```

```
BOOL CloseHandle ( HANDLE hFile );
BOOL ReadFile ( HANDLE hFile,           // handle of file to read
                void* lpBuffer,         // pointer to buffer that receives data
                DWORD nNumberOfBytesToRead, // number of bytes to read
                DWORD* lpNumberOfBytesRead, // pointer to number of bytes read
                void* lpOverlapped);    // pointer to structure for data

BOOL ReadFileLine ( HANDLE hFile,                   // handle of file to read
                    BYTE* lpBuffer,                 // pointer to buffer that receives
data
                    DWORD dwBytesToRead,            // number of bytes to read
                    DWORD* dwBytesRead,             // pointer to number of bytes read
                    DWORD* dwOffset);               // pointer to structure for data

BOOL WriteFile ( HANDLE hFile, LPCTSTR lpBuffer, DWORD dwBytesToWrite,
                 DWORD* pBytesWritten, void* p);

DWORD       GetFileSize ( HANDLE hFile, DWORD* pdwHigh );
#endif

#endif // !defined(_INC_XDTOOLS_H_)
```

```
//
// Module: xdEngine.h
// Subsystem: X:drive Client Engine (xdEngine.dll)
// Contents: Main include file for the xdEngine subsystem
//
// ------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ------------------------------------------------------------------
// ------------------------------------------------------------------
//
#ifndef _INC_XDRIVE_ENGINE_H_
#define _INC_XDRIVE_ENGINE_H_

#if _MSC_VER >= 1000
#pragma once
#endif // _MSC_VER >= 1000

#pragma warning (disable : 4100)
#pragma warning (disable : 4201)

#ifdef _XDENGINE_SOURCE_
        #define XDAPI_PUBLIC __declspec( dllexport )
#else
        #define XDAPI_PUBLIC // __declspec( dllimport )
#endif // _XDENGINE_SOURCE_

#pragma pack(1) // byte pack this thing!

#include <xdGlobals.h>

// ------------------------------------------------------------------
// XD_DIRENTRY - directory listing item
//
//      The following structure is used to hold an object in the file listing
// file. Xdrive will generate the file list for the directory and store it
// in the cache directory. That file will contain
// a list of record structures of this type. The .mnd file is generated
// based upon the FTP server specific format in the .idx file in the same
// cache directory.
//
typedef struct _xd_direntry_
{
        USHORT          cb;             // class size, MUST BE FIRST!!!!
  DWORD         dwFileAttributes;
        FILETIME        ftCreationTime;
  FILETIME      ftLastAccessTime;
  FILETIME      ftLastWriteTime;
  DWORD         nFileSizeHigh;
        DWORD           nFileSizeLow;
  TCHAR         cFileName[ XD_LEN_512 ];
        TCHAR           m_szObPerms [ XD_LEN_32 + 1 ];
        BYTE            m_bObOwnerPerms[4];
        BYTE            m_bObGroupPerms[4];
        BYTE            m_bObWorldPerms[4];
} XD_DIRENTRY, * LPXD_DIRENTRY;

#pragma pack()
```


3NSDOCID: <WO_____0133381A1 IA>

```
//
// Return codes
//
typedef UINT    XD_RETCODE;

#define XD_SUCCESS                          (int)0
#define XD_CANCEL                           (int)1
#define XD_ERR_CONNECTFAILED        (int)2          // socket connect failed
#define XD_ERR_LOGINFAILED          (int)3          // bad username/pwd
#define XD_ERR_CONNECTREFUSED       (int)5          // socket connect refused
#define XD_ERR_CANTRESOLVEHOST      (int)6          // cant resolve host
#define XD_ERR_SERVERUPGRADING      (int)7          // upgrading our servers

#define XD_ERR_OTHER                        (int)-1

//
// The following constants are used in the notification structure.
//
typedef enum
{
        XD_NOTIFY_IDLE                      = 0,        // nothing happening here
        XD_NOTIFY_STATUS_MSG        = 1000,     // status msg
        XD_NOTIFY_XFERDATA_DN       = 1001,     // downloading
        XD_NOTIFY_XFERDATA_UP       = 1002,     // uploading
        XD_NOTIFY_QUOTA                     = 1003,     // Update the quota
        XD_NOTIFY_START                     = 1004,     // Start an operation
        XD_NOTIFY_STOP                      = 1005      // Stop an operation
} XD_NOTIFY_CODE;

// ------------------------------------------------------
// XD_NOTIFY - This is our notification structure. The http engine
// will use this structure to pass status information back to the
// invoking method.
//
#pragma pack(1)

typedef struct _xd_notification_
{
        int                     m_iNotifyType;
        TCHAR           m_szMessage [ 1024 + sizeof(TCHAR) ];

        //
        // used for send/receive
        //
        ULONG           m_dwStartTime;          // GetTickCount()/1000
        ULONG           m_dwCurrentTime;        // GetTickCount()/1000

        DWORD                   m_dwCurrentBytes;
        DWORD                   m_dwTotalBytes;

        TCHAR           m_szLocalFileName [ MAX_PATH + sizeof(TCHAR) ];
        TCHAR           m_szRemoteFileName [ MAX_PATH + sizeof(TCHAR) ];
} XD_NOTIFY, *LPXD_NOTIFY;
#pragma pack()
#define XD_NOTIFY_MAX       50

#endif // _INC_XDRIVE_ENGINE_H_
```

```
//
// Module: tdimsgtbl.h
// Subsystem: X:drive Client Engine (xdEngine.dll)
// Contents: TDI Error table.
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by River Front Software
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//

#ifndef __TDIMSGTBL_H
#define __TDIMSGTBL_H

typedef struct
{
        TDI_STATUS    Status;
        int                   WinStatus;
        char          *szMsg;
} INETTDIMSG;

INETTDIMSG TdiMsgTbl[] =
{
        {TDI_SUCCESS, ERROR_SUCCESS, "TDI Success"},
        {TDI_NO_RESOURCES, ERROR_BAD_COMMAND, "No resources."},
        {TDI_ADDR_IN_USE, ERROR_BAD_COMMAND,  "Address already in use."},
        {TDI_BAD_ADDR, ERROR_BAD_COMMAND, "Address given is bad."},
        {TDI_NO_FREE_ADDR, ERROR_BAD_COMMAND, "No addresses available."},
        {TDI_ADDR_INVALID, ERROR_BAD_COMMAND, "Address object is invalid."},
        {TDI_ADDR_DELETED, ERROR_BAD_COMMAND, "Address object was deleted."},
        {TDI_BUFFER_OVERFLOW, ERROR_BAD_COMMAND, "Buffer overflowed."},
        {TDI_BAD_EVENT_TYPE, ERROR_BAD_COMMAND,  "Bad event type."},
        {TDI_BAD_OPTION, ERROR_BAD_COMMAND,  "Bad option or length."},
        {TDI_CONN_REFUSED, ERROR_BAD_COMMAND, "Connection was refused."},
        {TDI_INVALID_CONNECTION, ERROR_BAD_COMMAND,  "Invalid connection."},
        {TDI_ALREADY_ASSOCIATED, ERROR_BAD_COMMAND,  "Connection already associated."},
        {TDI_NOT_ASSOCIATED, ERROR_BAD_COMMAND,  "Connection not associated."},
        {TDI_CONNECTION_ACTIVE,  ERROR_BAD_COMMAND, "Connection is still active."},
        {TDI_CONNECTION_ABORTED, ERROR_BAD_COMMAND,  "Connection was aborted."},
        {TDI_CONNECTION_RESET, ERROR_BAD_COMMAND, "Connection was reset."},
        {TDI_TIMED_OUT,     ERROR_BAD_COMMAND, "Connection timed out."},
        {TDI_GRACEFUL_DISC,         ERROR_BAD_COMMAND, "Received a graceful disconnect."},
        {TDI_NOT_ACCEPTED, ERROR_BAD_COMMAND, "Data not accepted."},
        {TDI_MORE_PROCESSING, ERROR_BAD_COMMAND,  "More processing required."},
        {TDI_INVALID_STATE,ERROR_BAD_COMMAND, "TCB in an invalid state."},
        {TDI_INVALID_PARAMETER,  ERROR_BAD_COMMAND, "An invalid parameter."},
        {TDI_DEST_NET_UNREACH, ERROR_BAD_COMMAND, "Destination net is unreachable."},
        {TDI_DEST_HOST_UNREACH,  ERROR_BAD_COMMAND, "Dest. host is unreachable."},
        {TDI_DEST_UNREACHABLE, ERROR_BAD_COMMAND, "Dest. is unreachable. "},
        {TDI_DEST_PROT_UNREACH,  ERROR_BAD_COMMAND, "Destination protocol is unreachable."},
        {TDI_DEST_PORT_UNREACH,  ERROR_BAD_COMMAND, "Dest. port is unreachable."},
        {TDI_INVALID_QUERY,         ERROR_BAD_COMMAND, "Invalid query type specified."},
        {TDI_REQ_ABORTED, ERROR_BAD_COMMAND,  "Request was aborted for some reason."},
        {TDI_BUFFER_TOO_SMALL, ERROR_BAD_COMMAND, "Buffer was too small."},
        {TDI_CANCELLED,     ERROR_BAD_COMMAND, "The request was cancelled."},
        {TDI_BUFFER_TOO_BIG, ERROR_BAD_COMMAND, "Invalid request."},
        {ERROR_SEM_TIMEOUT, ERROR_SEM_TIMEOUT, "Timed out."},
        {TDI_PENDING, ERROR_BAD_COMMAND,  "Pending"}
```


BNSDOCID: <WO 01333381A1 IA>

```
};

#endif
```

```
//
// Module: tdisock.h
// Subsystem: X:drive Client Engine (xdEngine.dll)
// Contents: TDI Socket header file.
//
// ------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by River Front Software
// All rights reserved.
// ------------------------------------------------------------------
// ------------------------------------------------------------------
//

#ifndef __TDISOCK_H
#define __TDISOCK_H


#define TDISOCK_TIMEOUT      15000
#define WSADESCRIPTION_LEN     256
#define WSASYS_STATUS_LEN      128
typedef short SHORT;
typedef unsigned short USHORT;
typedef unsigned short ushort;
typedef unsigned int uint;
typedef unsigned long ulong;
typedef unsigned long ULONG;
typedef void (*CTEReqCmpltRtn)(void *Context, long FinalStatus, unsigned int ByteCount);
typedef unsigned char uchar;
typedef struct WSAData {
    WORD            wVersion;
    WORD            wHighVersion;
    char            szDescription[WSADESCRIPTION_LEN+1];
    char            szSystemStatus[WSASYS_STATUS_LEN+1];
    unsigned short  iMaxSockets;
    unsigned short  iMaxUdpDg;
    char FAR *      lpVendorInfo;
} WSADATA;

typedef WSADATA FAR *LPWSADATA;


#define USE_NDIS        1

#include <vtoolscp.h>
#include <crtl.h>

#undef USE_NDIS


#include <tdi.h>
#include <vxdsvc.h>
#include <tdivxd.h>
#include <tdistat.h>

#undef VTDI_Device_ID
#include <vtdi.h>


#define MAKELONG(a, b)     ((LONG)(((WORD)(a)) | ((DWORD)((WORD)(b))) << 16))
#define LOWORD(l)          ((WORD)(l))
```


ISDOCID: <WO_____0133381A1_IA>

```
#define HIWORD(l)       ((WORD)(((DWORD)(l) >> 16) & 0xFFFF))
#define LOBYTE(w)       ((BYTE)(w))
#define HIBYTE(w)       ((BYTE)(((WORD)(w) >> 8) & 0xFF))

/*
 * Structures returned by network data base library, taken from the
 * BSD file netdb.h.  All addresses are supplied in host order, and
 * returned in network order (suitable for use in system calls).
 */

struct  hostent {
    char    FAR * h_name;         /* official name of host */
    char    FAR * FAR * h_aliases;  /* alias list */
    short   h_addrtype;           /* host address type */
    short   h_length;           /* length of address */
    char    FAR * FAR * h_addr_list; /* list of addresses */
#define h_addr  h_addr_list[0]        /* address, for backward compat */
};

/***** Wait for semaphore flags */
#define WAIT_SEMA_FLAGS    0 //BLOCK_SVC_INTS | BLOCK_POLL

/***** Macro to call wait on semaphore function */
#define SEMAPHORE_WAIT( hSem, nTimeout )    \
        WaitOnSemaphore( s, hSem, #hSem, nTimeout )


/***** Checks for valid TDI status */
#define TDI_CHECKSTATUS(s)   if ( (s) != TDI_SUCCESS )          \
                                                                {
                \

                                                                errdebug( DBG_log("ERROR - File: %s
Line:%d TDI [%d] - %s\n",          \
                                                                        __FILE__, __LINE__, (s),
MapTdiToString(s)); );             \
                                                                goto Exit;
                                                                        \
                                                                }


/***** Destroys a semaphore */
#define SEMAPHORE_SAFE_DESTROY(hSem)    \
                if (hSem)                                               \
                        {                                                       \
                        vbsdebug( DBG_log("Destroy Semaphore %s", #hSem); ); \
                        UtilSemDestroy(hSem);   \
                        hSem = 0;                                       \
                        }


/***** Signals a semaphore */
#define SEMAPHORE_SAFE_SIGNAL(hSem)       \
                if (hSem)                                       \
                        {                                               \
                        vbsdebug( DBG_log("*** Signal Semaphore %s", #hSem); ); \
                        vbsdebug( DBG_log_hex_long( hSem ); );                  \
                        Signal_Semaphore_No_Switch( hSem );
                \
                        }       \
                else    \
                        {       \
                        vbsdebug( DBG_log("*** NO SEMAPHORE TO SIGNAL %s", #hSem); );     \
                        }
```

```
/*
 * Basic system type definitions, taken from the BSD file sys/types.h.
 */
typedef unsigned char   u_char;
typedef unsigned short  u_short;
typedef unsigned int    u_int;
typedef unsigned long   u_long;


/*
 * Constants and structures defined by the internet system,
 * Per RFC 790, September 1981, taken from the BSD file netinet/in.h.
 */

/*
 * Protocols
 */
#define IPPROTO_IP          0           /* dummy for IP */
#define IPPROTO_ICMP        1           /* control message protocol */
#define IPPROTO_IGMP        2           /* internet group management protocol */
#define IPPROTO_GGP         3           /* gateway^2 (deprecated) */
#define IPPROTO_TCP         6           /* tcp */
#define IPPROTO_PUP         12          /* pup */
#define IPPROTO_UDP         17          /* user datagram protocol */
#define IPPROTO_IDP         22          /* xns idp */
#define IPPROTO_ND          77          /* UNOFFICIAL net disk proto */

#define IPPROTO_RAW         255         /* raw IP packet */
#define IPPROTO_MAX         256


/*
 * Port/socket numbers: network standard functions
 */
#define IPPORT_ECHO         7
#define IPPORT_DISCARD      9
#define IPPORT_SYSTAT       11
#define IPPORT_DAYTIME      13
#define IPPORT_NETSTAT      15
#define IPPORT_FTP          21
#define IPPORT_TELNET       23
#define IPPORT_SMTP         25
#define IPPORT_TIMESERVER   37
#define IPPORT_NAMESERVER   42
#define IPPORT_WHOIS        43
#define IPPORT_MTP          57

/*
 * Port/socket numbers: host specific functions
 */
#define IPPORT_TFTP         69
#define IPPORT_RJE          77
#define IPPORT_FINGER       79
#define IPPORT_TTYLINK      87
#define IPPORT_SUPDUP       95

/*
 * UNIX TCP sockets
 */
#define IPPORT_EXECSERVER   512
```

```
#define IPPORT_LOGINSERVER    513
#define IPPORT_CMDSERVER      514
#define IPPORT_EFSSERVER      520

/*
 * UNIX UDP sockets
 */
#define IPPORT_BIFFUDP        512
#define IPPORT_WHOSERVER      513
#define IPPORT_ROUTESERVER    520
                        /* 520+1 also used */

/*
 * Ports < IPPORT_RESERVED are reserved for
 * privileged processes (e.g. root).
 */
#define IPPORT_RESERVED       1024

/*
 * Link numbers
 */
#define IMPLINK_IP            155
#define IMPLINK_LOWEXPER      156
#define IMPLINK_HIGHEXPER     158

/*
 * Internet address (old style... should be updated)
 */
struct in_addr {
    union {
        struct { u_char s_b1,s_b2,s_b3,s_b4; } S_un_b;
        struct { u_short s_w1,s_w2; } S_un_w;
        u_long S_addr;
    } S_un;
#define s_addr  S_un.S_addr
                    /* can be used for most tcp & ip code */
#define s_host  S_un.S_un_b.s_b2
                    /* host on imp */
#define s_net   S_un.S_un_b.s_b1
                    /* network */
#define s_imp   S_un.S_un_w.s_w2
                    /* imp */
#define s_impno S_un.S_un_b.s_b4
                    /* imp # */
#define s_lh    S_un.S_un_b.s_b3
                    /* logical host */
};

#define htons(host) ( (((host) & 0xff) << 8) | ((host) >> 8) )
ULONG htonl( ULONG hostlong );

/*
 * Definitions of bits in internet address integers.
 * On subnets, the decomposition of addresses to host and net parts
 * is done according to subnet mask, not the masks here.
 */
#define IN_CLASSA(i)          (((long)(i) & 0x80000000) == 0)
#define IN_CLASSA_NET         0xff000000
#define IN_CLASSA_NSHIFT      24
#define IN_CLASSA_HOST        0x00ffffff
#define IN_CLASSA_MAX         128
```

```
#define IN_CLASSB(i)        (((long)(i) & 0xc0000000) == 0x80000000)
#define IN_CLASSB_NET       0xffff0000

// end first 30 pages aj

                        int iMax = i;
                        CString* pArray = new CString[iMax];
                        i=0;
                        while (r1.RegEnumKey(i++,szVal,dwCnt))
                                pArray[i-1] = szVal;
                        r1.RegClose();
                        for (i=0; i<iMax; i++)
                        {
                                CString str = pArray[i];
                                CString strTmp;
                                strTmp.Format(_T("%s\\%s"), (LPCTSTR)szSubKey, (LPCTSTR)str);
                                r1.RegDeleteKey(hHive,strTmp);
                        }
                        delete[] pArray;

                }

                //
                // then Delete the key
                //
                m_lRetCode = ::RegDeleteKey ( hHive, szSubKey );
#endif

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        //
        // bOK is TRUE if ERROR_SUCCESS was returned
        //
        bOK = (ERROR_SUCCESS == m_lRetCode);

        return bOK;
} // End of RegDelete()

// ----------------------------------------------------------------
// Method: RegClose()
// Purpose: the the registry is open, close it.
//
BOOL xdRegistry::RegClose ( )
{
        BOOL bOK = TRUE;

#ifndef _VXD_SOURCE_
        try
        {
#endif

                if ( m_hKey != NULL )
                        ::RegCloseKey ( m_hKey );
```


BNSDOCID <WO 01333814A1 IA>

```
#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        //
        // unconditionally null the key
        //
        m_hKey = NULL;

        return bOK;
} // End of RegClose()

// ----------------------------------------------------------------------
//  Method: RegEnumStr()
// Purpose: enumerates subkeys for a key. i is the index to get
//
BOOL xdRegistry::RegEnumStr ( int i, LPCTSTR szValue, UINT uiLenWithNull )
{
        BOOL   bOK = TRUE;
        DWORD          dwIdx = i;
        DWORD          dwSize = (DWORD) uiLenWithNull;
        LPBYTE         pValue = (LPBYTE) szValue;

        //
        // Make sure that the registry is open
        //
        if (m_hKey == NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif
                //
                // initialize the string to be empty
                //
                memset ( pValue, 0, uiLenWithNull );

#ifdef _VXD_SOURCE_
                m_lRetCode = ::RegEnumKey (     m_hKey,                 // hive/key
                                                dwIdx,                  // index
of the key to get
                                                (LPTSTR)pValue,         // key
name will go here
                                                dwSize);                // the size of the
buffer
#else
        #ifdef _UNICODE
                CString sTmp;
                TCHAR szBuf = (BYTE*)sTmp.GetBuffer(512);
                m_lRetCode = ::RegEnumKeyA (m_hKey,             // hive/key
                                                dwIdx,          // index of the
key to get
                                                (char*)buf,     // key name will
go here
                                                dwSize);// the size of the buffer
                CString fred(buf);
```

```
                _tcscpy((LPTSTR)szValue,fred);
        #else
                m_lRetCode = ::RegEnumKey (     m_hKey,                 // hive/key
                                                dwIdx,                  // index
of the key to get
                                                (LPTSTR)pValue,         // key
name will go here
                                                dwSize);                // the size of the
buffer
        #endif
#endif

                bOK = (ERROR_SUCCESS == m_lRetCode);
                if (bOK != FALSE)
                {
                        //
                        // terminate the string...ensure that we dont go past
                        // the max lenth of the string!
                        //
                        ((LPTSTR)szValue) [ min(dwSize,uiLenWithNull) ] = 0;
                }

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegEnumStr()

// ----------------------------------------------------------------
//  Method: RegGetStr()
// Purpose: retrieves a string value from the registry. NOTE: The length
//                      of the string MUST include space for the NULL terminator since
//                      this character IS read from the registry. So, if you want to
//                      read `ABCD` from the registry, supply a uiLenWithNull of five(5).
//
BOOL xdRegistry::RegGetStr ( LPCTSTR szName, LPCTSTR szValue, UINT uiLenWithNull )
{
        BOOL   bOK = TRUE;
        DWORD          dwType = 0;
        DWORD          dwSize  = (DWORD) uiLenWithNull;
        LPBYTE         pValue  = (LPBYTE) szValue;

        //
        // Make sure that the registry is open
        //
        if (m_hKey == NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif
                //
                // initialize the string to be empty
                //
                memset ( pValue, 0, uiLenWithNull );
```


3NSDOCID: <WO 013338141 1A>

```
#ifdef _VXD_SOURCE_
                m_lRetCode = ::RegQueryValueEx (m_hKey,                 // hive/key
        // value name                                                   (LPTSTR)szName,

        // reserved                                                     NULL,

        // the REG_* type                                               &dwType,

        // pointer to the storage area                                  pValue,

        // # to fetch (WITH NULL)                                       &dwSize);
#else
        #ifdef _UNICODE
                char sShort[512];
                char sDefault[512];
                char buf[512];
                BOOL b;
                *sDefault = *sShort=0;
                WideCharToMultiByte     ( CP_ACP, 0, szName, -1, sShort, 512, sDefault, &b );
                m_lRetCode = ::RegQueryValueExA (m_hKey,                // hive/key
        // value name                                                   sShort,

                // reserved                                             0,

        // the REG_* type                                               &dwType,

pointer to the storage area                                             (LPBYTE)buf,    //

        // # to fetch (WITH NULL)                                       &dwSize);
                CString fred(buf);
                _tcscpy((LPTSTR)szValue,fred);
        #else
                m_lRetCode = ::RegQueryValueEx (m_hKey,                 // hive/key
                                                        szName,         // value
name

        // reserved                                                     0,

                                                                        &dwType,        // the
REG_* type

                                                                        pValue,         //
pointer to the storage area

                                                                        &dwSize);       // # to
fetch (WITH NULL)
        #endif
#endif

                bOK = (ERROR_SUCCESS == m_lRetCode);
                if ( bOK == TRUE )
                {
                        //
                        // make sure that it was a string value which was returned.
                        // If not, Delete the entry so we can regen it as a string
                        //
                        if (REG_SZ != dwType)
                                ::RegDeleteValue ( m_hKey, (LPTSTR)szName );

                        //
                        // terminate the string...ensure that we dont go past
                        // the max lenth of the string!
```

```
                        //
                        ((LPTSTR)szValue) [ min(dwSize,uiLenWithNull) ] = 0;
                }
#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegGetStr()

// ----------------------------------------------------------------------
// Method: RegPutStr()
// Purpose: write the information to the registry (write the NULL TOO).
//
BOOL xdRegistry::RegPutStr ( LPCTSTR szName, LPCTSTR szValue )
{
        BOOL   bOK = TRUE;

        //
        // Make sure that the registry is open
        //
        if (m_hKey == NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif


#ifdef _VXD_SOURCE_
                //
                // move everything into a temp buffer so that we can ensure
                // the existance of a NULL byte on the end of the string
                //
                CString sTmp;
                LPTSTR szBuf = sTmp.GetBuffer(512);
                memset ( szBuf, 0, 512 );
                memcpy ( szBuf, szValue, min(sTmp.GetAllocLength()-1,strlen(szValue)) );

                //
                // remember...always write the NULL byte too!
                //
                UINT    uiLenWithNull = strlen(szBuf) + 1;
                m_lRetCode = ::RegSetValueEx (  m_hKey,  (LPTSTR)szName, 0, REG_SZ,
                                                                        (LPBYTE)szBuf,
uiLenWithNull );
#else
        #ifdef _UNICODE
                char sShort[512];
                char sShortVal[512];
                char sDefault[512];
                BOOL b;
                *sDefault = *sShort=0;
                WideCharToMultiByte     ( CP_ACP, 0, szName, -1, sShort, 512, sDefault, &b );
                WideCharToMultiByte     ( CP_ACP, 0, szValue, -1, sShortVal, 512, sDefault, &b );
                m_lRetCode = ::RegSetValueExA (m_hKey, sShort, 0, REG_SZ,
```

```
(LPBYTE) sShortVal,
 strlen(sShortVal)+1 );
        #else
                CString sTmp;
                LPTSTR szBuf = (LPTSTR)sTmp.GetBuffer(1024);
                memset ( szBuf, 0, 1024 );
                memcpy ( szBuf, szValue, min(1023,_tcslen(szValue))*sizeof(TCHAR) );
                szBuf[_tcslen(szValue)] = 0;

                //
                // remember...always write the NULL byte too!
                //
                UINT    uiLenWithNull = _tcslen(szBuf) + 1;

                m_lRetCode = ::RegSetValueEx (  m_hKey, szName, 0, REG_SZ,
                                                                (LPBYTE) szBuf,
 uiLenWithNull );
        #endif
#endif

                bOK = (ERROR_SUCCESS == m_lRetCode);

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegPutStr()

// ----------------------------------------------------------------
// Method: RegGetNum()
// Purpose: Retrieves a number from the registry. there are various
//                      overloads for different types.
//
BOOL xdRegistry::RegGetNum(LPCTSTR sName, DWORD& dwValue)
{
        BOOL   bOK = TRUE;
        CString sTmp;
        LPTSTR          szBuf = sTmp.GetBuffer(XD_LEN_64);
        memset ( szBuf, 0, XD_LEN_64 );
        DWORD  dwType = 0;
        DWORD           dwSize = XD_LEN_64-1;

        //
        // Make sure that the registry is open
        //
        if (m_hKey == NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif

#ifdef _VXD_SOURCE_
                bOK = RegGetStr ( sName, szBuf, sTmp.GetAllocLength()-1 );
                if ( bOK == TRUE )
```

```
                        dwValue = (DWORD)atol((LPTSTR)szBuf);
#else
        #ifdef _UNICODE
                char sShort[512];
                char sDefault[512];
                char bufTmp[512];
                BOOL b=0;
                *sDefault = *sShort=0;
                WideCharToMultiByte     ( CP_ACP, 0, sName, -1, sShort, 512, sDefault, &b );
                m_lRetCode = ::RegQueryValueExA (m_hKey,                // hive/key
                                                                        sShort,
        // value name
                                                                        0,
                // reserved
                                                                        &dwType,
        // the REG_* type
                                                                        (LPBYTE)bufTmp,
        // pointer to the storage area
                                                                        &dwSize);
        // # to fetch (WITH NULL)
                bOK = (ERROR_SUCCESS == m_lRetCode);
                if ( bOK == TRUE )
                {
                        if ( dwType == REG_SZ )
                                dwValue = (DWORD)atol(bufTmp);
                }
        #else
                m_lRetCode = ::RegQueryValueEx (        m_hKey,
                                                                        sName,
                                                                        0,
                                                                        &dwType,
                                                                        (BYTE*)szBuf,
                                                                        &dwSize );
                bOK = (ERROR_SUCCESS == m_lRetCode);
                if ( bOK == TRUE )
                {
                        if ( dwType == REG_SZ )
                                dwValue = (DWORD)_ttol((LPTSTR)szBuf);
                        if ( dwType == REG_DWORD )
                                dwValue = * ((DWORD*)szBuf);
                }
        #endif
#endif

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegGetNum()

// ----------------------------------------------------------------
// Method: RegGetNum()
// Purpose: Retrieves a number from the registry. UINT version
//
BOOL xdRegistry::RegGetNum(LPCTSTR sName, UINT& uiValue)
{
```

```
        DWORD           dwValue = uiValue;
        BOOL   bOK = RegGetNum(sName,dwValue);

        uiValue = (UINT) dwValue;

        return bOK;
} // End of RegGetNum()

// ----------------------------------------------------------------
// Method: RegGetNum()
// Purpose: Retrieves a number from the registry. BOOL version
//
BOOL xdRegistry::RegGetNum(LPCTSTR sName, BOOL& bValue)
{
        DWORD           dwValue = bValue;
        BOOL   bOK = RegGetNum(sName,dwValue);

        bValue = (BOOL) dwValue;

        return bOK;
} // End of RegGetNum()

// ----------------------------------------------------------------
// Method: RegGetNum()
// Purpose: Retrieves a number from the registry. WORD VERSION.
//
BOOL xdRegistry::RegGetNum(LPCTSTR sName, WORD& wValue)
{
        DWORD           dwValue = wValue;
        BOOL   bOK = RegGetNum(sName,dwValue);

        wValue = (WORD) dwValue;

        return bOK;
} // End of RegGetNum()

// ----------------------------------------------------------------
// Method: RegPutNum()
// Purpose: writes a numeric value to the registry.
//
BOOL xdRegistry::RegPutNum(LPCTSTR sName, DWORD dwValue)
{
        BOOL   bOK = TRUE;

        //
        // make sure the key is open
        //
        if (m_hKey==NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif

#ifdef _VXD_SOURCE_
                CString sTmp;
                BYTE* szBuf = (BYTE*)sTmp.GetBuffer(132);
                sprintf( (LPTSTR)szBuf, _T("%lu"), dwValue);
                UINT uiLenWithNull = strlen((LPTSTR)szBuf) + 1; // ADD THE NULL!!!!!!!
                m_lRetCode = ::RegSetValueEx (  m_hKey, (LPTSTR)sName,
```

```
                                                                    0, REG_SZ, szBuf,
uiLenWithNull );
                bOK = (ERROR_SUCCESS == m_lRetCode);
#else
        #ifdef _UNICODE
                char sShort[512];
                char sDefault[512];
                BOOL b;
                *sDefault = *sShort=0;
                WideCharToMultiByte     ( CP_ACP, 0, sName, -1, sShort, 512, sDefault, &b );
                sprintf( sDefault, "%lu", dwValue );
                m_lRetCode = ::RegSetValueExA (m_hKey, sShort, 0, REG_SZ,
                                                                    (LPBYTE)sDefault,
strlen(sDefault)+1 );
        #else
                CString sTmp;
                LPTSTR szBuf = sTmp.GetBuffer(XD_LEN_64);
                wsprintf( (LPTSTR)szBuf, _T("%lu"), dwValue);
                UINT uiLenWithNull = _tcslen((LPTSTR)szBuf) + 1; // ADD THE NULL!!!!!!!
                m_lRetCode = ::RegSetValueEx (  m_hKey,
                                                                    sName,
                                                                    0,
                                                                    REG_SZ,
                                                                    (BYTE*)szBuf,
                                                                    uiLenWithNull);
        #endif
#endif

                bOK = (ERROR_SUCCESS == m_lRetCode);

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegPutNum()

// ----------------------------------------------------------------
// Method: RegDeleteValue()
// Purpose:
//
BOOL xdRegistry::RegDeleteValue ( LPCTSTR szValue )
{
        BOOL   bOK = TRUE;

        //
        // make sure the key is open
        //
        if (m_hKey==NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif

                m_lRetCode = ::RegDeleteValue (  m_hKey, (LPTSTR)szValue );
```


INSDOCID: <WO 0133381A1 IA>

```
                bOK = (ERROR_SUCCESS == m_lRetCode);

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegDeleteValue()

// ----------------------------------------------------------------
//  Method: RegEnumVal()
// Purpose: enumerates values for a key. i is the index to get
//
BOOL xdRegistry::RegEnumVal ( int i, LPCTSTR szValueName, UINT uiNameLenWithNull,
                                                        LPCTSTR szValueData, UINT
uiDataLenWithNull)
{
        BOOL   bOK = TRUE;
        DWORD          dwIdx = i;
        DWORD          dwSize = (DWORD) uiNameLenWithNull;
        DWORD  dwDataSize = (DWORD)uiDataLenWithNull;
        LPBYTE         pValue = (LPBYTE) szValueName;
        LPBYTE  pDataValue = (LPBYTE) szValueData;

        //
        // make sure the key is open
        //
        if (m_hKey==NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif

        //
        // initialize the string to be empty
        //
        memset ( pValue, 0, uiNameLenWithNull );
        memset ( pDataValue, 0, uiDataLenWithNull );

#ifdef _VXD_SOURCE_
                m_lRetCode = ::RegEnumValue(m_hKey,              // hive/key
dwIdx,                  // index
of the value to get
(LPTSTR)pValue,         //
valuename will go here
&dwSize,                // the
size of the buffer
0,
        // reserved,
NULL,                   //
address of type code
pDataValue,
&dwDataSize);

#else
                m_lRetCode = ::RegEnumValue(m_hKey,              // hive/key
```

```
                                                    dwIdx,          // index
of the value to get
                                                    (LPTSTR)pValue, //
valuename will go here
                                                    &dwSize,        // the
size of the buffer
                                                    0,
        // reserved,
                                                    NULL,           //
address of type code
                                                    pDataValue,
                                                    &dwDataSize);
#endif

                bOK = (ERROR_SUCCESS == m_lRetCode);
                if ( bOK == TRUE )
                {
                        //
                        // terminate the string...ensure that we dont go past
                        // the max lenth of the string!
                        //
                        ((LPTSTR)szValueName) [ min(dwSize,uiNameLenWithNull) ] = 0;
                        ((LPTSTR)szValueData) [ min(dwDataSize,uiDataLenWithNull) ] = 0;
                }

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegEnumVal()

// ----------------------------------------------------------------------
//  Method: RegPutBin()
// Purpose: write the information to the registry
//
BOOL xdRegistry::RegPutBin ( LPCTSTR szName, BYTE* pBuffer, UINT uiLength )
{
        BOOL   bOK = TRUE;

        //
        // make sure the key is open
        //
        if (m_hKey==NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif
                //
                // move everything into a temp buffer so that we can ensure
                // the existance of a NULL byte on the end of the string
                //
                CString sTmp;
                LPTSTR szBuf = sTmp.GetBuffer(132);
                memset ( szBuf, 0, 132 );
```

```
                memcpy ( szBuf, pBuffer, min(sTmp.GetAllocLength()-1,uiLength) );

                m_lRetCode = ::RegSetValueEx (  m_hKey,
                                                                (LPTSTR)szName,
                                                                0,
                                                                REG_BINARY,
                                                                (LPBYTE) szBuf,
                                                                uiLength );
                bOK = (ERROR_SUCCESS == m_lRetCode);

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegPutBin()

// ----------------------------------------------------------------
// Method: RegEnumKey()
// Purpose: enumerates values for a key. i is the index to get
//
BOOL xdRegistry::RegEnumKey ( int i, LPCTSTR szValueName, UINT uiNameLenWithNull)
{
        BOOL   bOK = TRUE;
        DWORD          dwIdx = i;
        DWORD          dwSize = (DWORD) uiNameLenWithNull;
        LPBYTE         pValue = (LPBYTE) szValueName;

        //
        // make sure the key is open
        //
        if (m_hKey==NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif
                //
                // initialize the string to be empty
                //
                memset ( pValue, 0, uiNameLenWithNull );

#ifdef _VXD_SOURCE_
                m_lRetCode = ::RegEnumKey(m_hKey,               // hive/key
                                                        dwIdx,          // index of the
value to get
                                                        (LPTSTR)pValue, // valuename will
go here
                                                        dwSize);        // the size of the
buffer
#else
                m_lRetCode = ::RegEnumKey(m_hKey,       // hive/key
                                                        dwIdx,          // index of the
value to get
                                                        (LPTSTR)pValue, // valuename will
go here
```

```
                                                    dwSize);        // the size of the
buffer
#endif
                bOK = (ERROR_SUCCESS == m_lRetCode);
                if (bOK==TRUE)
                {
                        //
                        // terminate the string...ensure that we dont go past
                        // the max lenth of the string!
                        //
                        ((LPTSTR)szValueName) [ min(dwSize,uiNameLenWithNull) ] = 0;
                }

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegEnumKey()
```

```
//
// Module: xdFileIO.cpp
// Subsystem: X:drive Tools Library (xdTools.dll)
// Contents: Redefinitions for the FILE IO functions
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//
#include "stdafx.h"
#include <xdGlobals.h>              // X:drive system wide globals
#include <xdTools.h>

#ifdef _DEBUG
        #undef THIS_FILE
        static char BASED_CODE THIS_FILE[] = __FILE__;
#endif

#ifdef _VXD_SOURCE_
        #include LOCKED_CODE_SEGMENT
        #include LOCKED_DATA_SEGMENT
#endif

#ifdef _VXD_SOURCE_
// ---------------------------------------------------------------------
// Function: CreateFile()
// Purpose: This API function maps the standard Win32 CreateFile function
//                          to the Ring-0 R0_OpenCreateFile() call.
// Returns: INVALID_HANDLE_VALUE - bad
//                          something else - good!
//
HANDLE CreateFile ( LPCTSTR lpFileName,      // pointer to name of the file
                                        DWORD dwDesiredAccess,    // access (read-write) mode
                                        DWORD dwShareMode,        // share mode
                                        void* lpSecAtt,                         // pointer to security
attributes
                                        DWORD dwCreateFlags,            // how to create
                                        DWORD dwFlagsAndAttributes,  // file attributes
                                        HANDLE)
{
        HANDLE          h = INVALID_HANDLE_VALUE;
        WORD  wError = 0;
        WORD  wMode = 0;
        BYTE   action = 0;

        switch (dwDesiredAccess)
        {
        case GENERIC_READ:
                wMode = OPEN_ACCESS_READONLY;
                break;
        case GENERIC_WRITE:
                wMode = OPEN_ACCESS_WRITEONLY;
                break;
        default:
                wMode = OPEN_ACCESS_READWRITE;
                break;
        }
```


PNSDOCID: <WO 01333B1A1 IA>

```
        //
        // file sharing not supported!
        //
        wMode |= OPEN_SHARE_COMPATIBLE;

        //
        // Create Attributes
        //
        switch ( dwCreateFlags )
        {
        case CREATE_NEW: // create New file. fail if file exists
                action = ACTION_IFEXISTS_FAIL | ACTION_IFNOTEXISTS_CREATE;
                break;
        case CREATE_ALWAYS: // create New file. overwrite if exists
                action = ACTION_IFEXISTS_TRUNCATE | ACTION_IFNOTEXISTS_CREATE;
                break;
        case OPEN_EXISTING: // open file, fail if the file does not exists
                action = ACTION_IFEXISTS_OPEN | ACTION_IFNOTEXISTS_FAIL;
                break;
        case OPEN_ALWAYS: // open file. if !exists, create
                action = ACTION_IFEXISTS_OPEN | ACTION_IFNOTEXISTS_CREATE;
                break;
        case TRUNCATE_EXISTING: // open&truncate file. fail if it does not exist
                action = ACTION_IFEXISTS_OPEN | ACTION_IFEXISTS_TRUNCATE |
ACTION_IFNOTEXISTS_FAIL;
                break;
        }

        h = R0_OpenCreateFile(1,(LPTSTR)lpFileName,wMode,
                                                ATTR_NORMAL,action,R0_NO_CACHE,&wError,
&action);
        return h;
} // End of CreateFile()

// ----------------------------------------------------------------
// Function: ReadFile()
// Purpose: This API function maps the standard Win32 ReadFile function
//                      to the Ring-0 R0_ReadFile() call.
// Returns: TRUE - Good read
//                      FALSE - Bad Read
//
BOOL ReadFile ( HANDLE hFile, void* lpBuffer, DWORD dwBytesToRead,
                        DWORD* pdwBytesRead, void* pdwOffset)
{
        WORD wError = 0;
        DWORD dwOffset = 0;

        if ( pdwOffset )
                dwOffset = *((DWORD*)pdwOffset);

        *pdwBytesRead = R0_ReadFile ( TRUE, hFile, lpBuffer, dwBytesToRead,
                                                                dwOffset, &wError );
        return ( wError == 0 );
} // End of ReadFile()

// ----------------------------------------------------------------
// Function: WriteFile()
// Purpose: This API function maps the standard Win32 WriteFile function
//                      to the Ring-0 R0_WriteFile() call.
// Returns: TRUE - Good write
//                      FALSE - Bad write
```


3NSDOCID: <WO_____0133381A1_IA>

```
//
BOOL WriteFile ( HANDLE hFile, LPCTSTR lpBuffer, DWORD dwBytesToWrite,
                                DWORD* pBytesWritten, void* p)
{
        WORD  wError = 0;
        DWORD         dwFilePos = R0_GetFileSize(hFile,&wError);
        *pBytesWritten = R0_WriteFile ( TRUE, hFile, (void*)lpBuffer, dwBytesToWrite,
                                                                        dwFilePos, &wError );
        return (wError == 0);
} // End of WriteFile()

// ---------------------------------------------------------------
// Function: CloseHandle()
// Purpose: This API function maps the standard Win32 CloseHandle function
//                      to the Ring-0 R0_CloseFile() call.
// Returns: TRUE - success
//                      FALSE - failure
//
BOOL CloseHandle ( HANDLE hFile )
{
        WORD wError = 0;
        return R0_CloseFile ( hFile, &wError );
} // End of CloseHandle()

// ---------------------------------------------------------------
// Function: GetFileSize()
// Purpose: This API function maps the standard Win32 GetFileSize function
//                      to the Ring-0 R0_GetFileSize() call.
// Returns: TRUE - success
//                      FALSE - failure
//
DWORD GetFileSize ( HANDLE hFile, DWORD* pdwHigh )
{
        WORD wError = 0;
        return R0_GetFileSize ( hFile, &wError );
} // End of GetFileSize()


// ---------------------------------------------------------------
// Function: ReadFileLine()
// Purpose: This API function maps the standard Win32 ReadFile function
//                      to the Ring-0 R0_ReadFile() call.
// Returns: TRUE - Good read
//                      FALSE - Bad Read
//
BOOL ReadFileLine ( HANDLE hFile, BYTE* lpBuffer,
                                DWORD dwBytesToRead,
                                        DWORD* pdwBytesRead,
                                        DWORD* pdwOffset )
{
        WORD wError = 0;
        DWORD dwOffset = 0;

        if ( pdwOffset )
                dwOffset = *((DWORD*)pdwOffset);

        //
        // Check for EOF
        //
        if ( dwOffset >= R0_GetFileSize(hFile,&wError) )
                return FALSE;
```

```
        // *pdwBytesRead = R0_ReadFile ( TRUE, hFile, lpBuffer, dwBytesToRead,
        //                                                      dwOffset, &wError );

        memset ( lpBuffer, 0, dwBytesToRead );

        int iTmpBytesRead = 1;
        BOOL bFoundEOL = FALSE;
        int i=0;
        for ( i=0; (iTmpBytesRead != 0) && (i<dwBytesToRead) &&
                                        (wError == 0) && (bFoundEOL==FALSE); i++ )
        {
                iTmpBytesRead = R0_ReadFile ( TRUE, hFile, &(lpBuffer[i]), 1, dwOffset+i, &wError );
                if ((iTmpBytesRead != 0) &&      (wError == 0))
                {
                        if ( lpBuffer[i] == chNL )
                                bFoundEOL = TRUE;
                }
        }

        *pdwBytesRead = i;

        return ( wError == 0 );
} // End of ReadFileLine()
#endif
```


NSDOCID: <WO_____0133381A1_IA>

```
//
// Module: xdDebugger.cpp
// Subsystem: X:drive Tools Library (xdTools.dll)
// Contents: Implementation module for the xdDebugger utliity class.
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//
#include "stdafx.h"
#include <xdGlobals.h>              // X:drive system wide globals
#include <xdTools.h>                        // X:drive Tools Related
#include <xdDebugger.h>

#ifndef _VXD_SOURCE_
        #include <afxmt.h>
        #include "resource.h"
#endif

#ifdef _DEBUG
        #undef THIS_FILE
        static char BASED_CODE THIS_FILE[] = __FILE__;
#endif

#ifdef _VXD_SOURCE_
        #include LOCKED_CODE_SEGMENT
        #include LOCKED_DATA_SEGMENT
#endif

// ---------------------------------------------------------------------
// Method: xdDebugger()
// Purpose: Constructor for the debugger class.
//
xdDebugger::xdDebugger()
{

#ifndef _VXD_SOURCE_
        try
#endif
        {
                m_szLogFile = (LPTSTR)malloc(XD_LEN_1024);
                m_szMsg = (LPTSTR)malloc(XD_LEN_2048);
                m_szBuf = (LPTSTR)malloc(XD_LEN_2048);

                m_hLogFile = NULL;
                m_bLogFile = FALSE;

                _tcscpy ( m_szLogFile, XD_LOGFILE_NP );

#ifndef _VXD_SOURCE_
                m_pSem = new CSemaphore(1,1);
#endif
        }
#ifndef _VXD_SOURCE_
        catch(...)
        {
                XDCATCH;
```

```
        }
#endif
} // End of xdDebugger()

// ----------------------------------------------------------------------
// Method: ~xdDebugger()
// Purpose: Destructor.
//
xdDebugger::~xdDebugger()
{
#ifndef _VXD_SOURCE_
        delete m_pSem;
#endif
        free(m_szMsg);
        free(m_szLogFile);
        free(m_szBuf);

} // End of ~xdDebugger()

// ----------------------------------------------------------------------
// Method: DebuggerOn()
// Purpose: turns on debugging to the optional logfile
//
void xdDebugger::DebuggerOn(BOOL bInitialize)
{
#ifdef _VXD_SOURCE_
        WORD wError = 0;
        BYTE bAction = 0;

        //
        // force a creation of the file if it does not already exist. Then
        // simply close the file; we ll open it when we need to write to
        // it.
        //
        m_bLogFile = TRUE;
        if ( bInitialize == TRUE )
        {
                LPTSTR szOldFile = (LPTSTR)malloc( XD_LEN_1024 );
                strcpy ( szOldFile, m_szLogFile );
                LPTSTR pDot = strrchr(szOldFile,chPERIOD);
                if ( pDot != NULL)
                        *pDot = NULL;
                strcat ( szOldFile, ".old" );
                R0_DeleteFile ( szOldFile, 0, &wError );
                R0_RenameFile ( m_szLogFile, szOldFile, &wError );
                m_hLogFile = R0_OpenCreateFile ( TRUE, m_szLogFile,

OPEN_SHARE_DENYWRITE|OPEN_ACCESS_WRITEONLY,
                                                        ATTR_NORMAL,

ACTION_IFEXISTS_TRUNCATE|

ACTION_IFNOTEXISTS_CREATE,
                                                        0, &wError,

(PUCHAR)&bAction );
                free(szOldFile);
        }
        else
                m_hLogFile = R0_OpenCreateFile ( TRUE, m_szLogFile,

OPEN_SHARE_DENYWRITE|OPEN_ACCESS_WRITEONLY,
                                                        ATTR_NORMAL,
```

```
ACTION_IFEXISTS_OPEN|

ACTION_IFNOTEXISTS_CREATE,

                                                                0, &wError,
(PUCHAR)&bAction );
        //
        // Ok, we opened/created the close it again. We never want to keep
        // the logfile open so that we ensure that its contents are saved
        // to disk.
        //
        if ( (m_hLogFile != NULL) && (wError == 0) )
                R0_CloseFile ( m_hLogFile, &wError );
        m_hLogFile = NULL;
#else
        try
        {
                //
                // force a creation of the file if it does not already exist. Then
                // simply close the file; we ll open it when we need to write to
                // it.
                //
                m_bLogFile = TRUE;

                if (bInitialize == TRUE)
                {
                        CString sOldFile;
                        LPTSTR szOldFile = sOldFile.GetBuffer(512);;
                        _tcscpy ( szOldFile, m_szLogFile );
                        LPTSTR pDot = _tcsrchr(szOldFile,chPERIOD);
                        if ( pDot != NULL)
                                *pDot = NULL;
                        _tcscat ( szOldFile, _T(".old") );
                        DeleteFile ( szOldFile );
                        try
                        {
                                CFile::Rename( m_szLogFile, szOldFile );
                        }
                        catch(...)
                        {
                        }
#ifdef _UNICODE
                        m_hLogFile = _wfopen(m_szLogFile,_T("w+"));
#else
                        m_hLogFile = fopen(m_szLogFile,_T("w+"));
#endif
                }
                else
#ifdef _UNICODE
                        m_hLogFile = _wfopen(m_szLogFile,_T("a+"));
#else
                        m_hLogFile = fopen(m_szLogFile,_T("a+"));
#endif
                if ( m_hLogFile != NULL )
                        fclose(m_hLogFile);
                m_hLogFile = NULL;
        }
        catch(...)
        {
                XDCATCH;
        }
#endif
```

```
} // End of DebuggerOn()

// ----------------------------------------------------------------------
//  Method: DebuggerOff()
// Purpose: turns off debugging to the optional logfile
//
void xdDebugger::DebuggerOff()
{
#ifdef _VXD_SOURCE
        WORD wError = 0;
        if (m_hLogFile!=NULL)
                R0_CloseFile ( m_hLogFile, &wError );
        m_bLogFile = FALSE;
#else
        m_bLogFile = FALSE;
#endif

} // End of DebuggerOff()

// ----------------------------------------------------------------------
//  Method: DEBUGMSG()
// Purpose: always dumps the messages to debugger window and optionally to
//       the file...
//
void xdDebugger::DEBUGMSG(TCHAR *fmt,...)
{

#ifdef _VXD_SOURCE_
        va_list             args;
        //
        // parse out the info
        //
        va_start(args,fmt);
        vsprintf(m_szBuf,fmt,args);
        va_end(args);
        //
        // add a <cr>
        //
        if (strchr(m_szBuf,chNL)==NULL)
                strcat(m_szBuf,"\r\n");

        strcpy ( m_szMsg, "FSD: ");
        strcat ( m_szMsg, m_szBuf );

#ifdef DEBUG
        DEBUGTRACE(m_szMsg);
#endif

        //
        // if the logfile is engaged, dump it!
        //
        if (m_bLogFile==TRUE)
        {
                WORD wError = 0;
                BYTE bAction = 0;

                //
                // open the file, dump the string, then close the file!!!
                //
                m_hLogFile = R0_OpenCreateFile ( TRUE, m_szLogFile,
```

```
OPEN_SHARE_DENYWRITE|OPEN_ACCESS_WRITEONLY,
                                                        ATTR_NORMAL,
ACTION_IFEXISTS_OPEN | ACTION_IFNOTEXISTS_CREATE,
                                                        0, &wError,
(PUCHAR)&bAction );
                if ((m_hLogFile != NULL) && (wError == 0))
                {
                        DWORD dwOffset = R0_GetFileSize ( m_hLogFile, &wError );
                        R0_WriteFile ( TRUE, m_hLogFile, m_szMsg, strlen(m_szMsg),
                                                dwOffset, &wError);
                        R0_CloseFile(m_hLogFile,&wError);
                        m_hLogFile = NULL;
                }
        }
#else
        try
        {
                //
                // only wait 1 second, then do it. This guarantees that
                // we dont lock up the system
                //
                if ( m_pSem->Lock(5000) == TRUE )
                {
                        va_list         args;
                        //
                        // parse out the info
                        //
                        va_start(args,fmt);
                        _vstprintf(m_szBuf,fmt,args);
                        va_end(args);
                        //
                        // add a <cr>
                        //
                        if (_tcschr(m_szBuf,chNL)==NULL)
                                _tcscat(m_szBuf,szNL);

                        *m_szMsg = 0;
                        _tcscpy(m_szMsg,_T("LOG: "));
                        _tcscat(m_szMsg,m_szBuf);

                        //
                        // dump it to the IDE debugger
                        //
                        #ifdef _DEBUG
                          OutputDebugString(m_szMsg);
                        #endif

                        //
                        // if the logfile is engaged, dump it!
                        //
                        if (m_bLogFile == TRUE)
                        {

                                //
                                // open the file, dump the string, then close the file!!!
                                //
#ifdef _UNICODE
                                m_hLogFile = _wfopen(m_szLogFile,_T("a"));
#else
                                m_hLogFile = fopen(m_szLogFile,_T("a"));
```

```
#endif
                                        if (m_hLogFile != NULL)
                                        {
                                                _fputts(m_szMsg,m_hLogFile);
                                                //fflush(m_hLogFile);
                                                fclose(m_hLogFile);
                                                m_hLogFile = NULL;
                                        }
                                }
                        }
                }
                catch(...)
                {
                        XDCATCH;
                        if (m_hLogFile!=NULL)
                        {
                                //fflush(m_hLogFile);
                                fclose(m_hLogFile);
                                m_hLogFile = NULL;
                        }
                }
                m_pSem->Unlock();
#endif

} // End of DEBUGMSG

#ifndef _VXD_SOURCE_
// ----------------------------------------------------------------------
// Method: DEBUGMSG()
// Purpose: loads the string and then dumps it to the logfile.
//
void xdDebugger::DEBUGMSG(UINT uiResourceId)
{
  CString s = XD_LOADSTRING(uiResourceId);
  DEBUGMSG(_T("%s\n"),s);
} // End of DEBUGMSG()
#endif

// ----------------------------------------------------------------------
// Method: SetLogName()
// Purpose:
//
void xdDebugger::SetLogName(LPCTSTR s)
{
        _tcscpy ( m_szLogFile, s );
} // End of SetLogName()

// ----------------------------------------------------------------------
// Method: IsDebuggerOn()
// Purpose:
//
BOOL xdDebugger::IsDebuggerOn ( void )
{
        return m_bLogFile;
} // End of IsDebuggerOn()
```

JavaScript Listing

//button.js 1
//diskInfo.js 6
//launch.js 10
//nav.js 11
//saveToXdrive.js 28
//secure_login.js 31
//skip.js 33
//skipthedownload.js 35
//submit.js 38
//uploadStatus.js 53
//utils.js 54
//verify_lib.js 57
//xparse.js 69

BNSDOCID: <WO 0133381A1 IA>

//button.js

```
// Is called upon loading of page to set up the button image arrays
function XDloadToolbarButtons ()
      {
      if (XD_gsAction == '') {
            for (var i=0; i < 4; i=i+3)
                  {
                  g_aimgUpload[i] = new Image();
                  g_aimgDownload[i] = new Image();
                  g_aimgNewFolder[i] = new Image();
                  g_aimgMove[i] = new Image();
                  g_aimgRename[i] = new Image();
                  g_aimgDelete[i] = new Image();
                  g_aimgHelp[i] = new Image();
                  g_aimgView[i] = new Image();
                  g_aimgShare[i] = new Image();

                  g_aimgUpload[i].src = XD_gsGraphicsLanguageRoot+ "up" + i +
".gif";
                  g_aimgDownload[i].src = XD_gsGraphicsLanguageRoot+ "down" +
i + ".gif";
                  g_aimgView[i].src = XD_gsGraphicsLanguageRoot+ "view" + i +
".gif";
                  g_aimgNewFolder[i].src = XD_gsGraphicsLanguageRoot+ "new" +
i + ".gif";
                  g_aimgMove[i].src = XD_gsGraphicsLanguageRoot+ "move" + i +
".gif";
                  g_aimgRename[i].src = XD_gsGraphicsLanguageRoot+ "name" + i
+ ".gif";
                  g_aimgDelete[i].src = XD_gsGraphicsLanguageRoot+ "delete" +
i + ".gif";
                  g_aimgShare[i].src =  XD_gsGraphicsLanguageRoot+ "share" +
i + ".gif";

                  //
                  g_aimgUpload[i].src = XD_gsGraphicsLanguageRoot+
"nav_upload" + i + ".gif";
                  //
                  g_aimgDownload[i].src = XD_gsGraphicsLanguageRoot+
"nav_download" + i + ".gif";
                  //
                  g_aimgView[i].src = XD_gsGraphicsLanguageRoot+ "nav_view" +
i + ".gif";
                  //
                  g_aimgNewFolder[i].src = XD_gsGraphicsLanguageRoot+
"nav_newfolder" + i + ".gif";
                  //
                  g_aimgMove[i].src = XD_gsGraphicsLanguageRoot+ "nav_move" +
i + ".gif";
                  //
                  g_aimgRename[i].src = XD_gsGraphicsLanguageRoot+
"nav_rename" + i + ".gif";
                  //
                  g_aimgDelete[i].src = XD_gsGraphicsLanguageRoot+
"nav_delete" + i + ".gif";
                  //
                  g_aimgShare[i].src =  XD_gsGraphicsLanguageRoot+
"nav_share" + i + ".gif";
                  }
            }
      }

// Takes a button and an event and returns a status
// as defined by the containt button statuses
function XDtoolbarButtonStatus(button, event)
      {
      var rv = XD_TOOLBAR_BUTTON_ENABLED;
```


NSDOCID: <WO_____0133381A1_IA>

```
    // Just exit if no controls are enabled
    if(!ControlsEnabled)
    {
          return XD_TOOLBAR_BUTTON_DISABLED;
    }

    if (event == XD_EVENT_MOUSEOVER)
    {
    rv = XD_TOOLBAR_BUTTON_ACTIVE;
    }
    else if (event == XD_EVENT_MOUSEOUT)
    {
    rv = XD_TOOLBAR_BUTTON_ENABLED;
    }
    else if (event == XD_EVENT_CLICK)
    {
    rv = XD_TOOLBAR_BUTTON_CLICKED;
    }

    if ((button == XD_TOOLBAR_BUTTON_UPLOAD)
    && (XD_gnSelectedFolderCount != 1))
    {
    rv = XD_TOOLBAR_BUTTON_DISABLED;
    }
    else if
     ((button == XD_TOOLBAR_BUTTON_DOWNLOAD)
      && (XD_gnSelectedCount  != 1 ||  XD_gnSelectedFolderCount != 0))
    {
    rv = XD_TOOLBAR_BUTTON_DISABLED;
    }
    else if

     ((button == XD_TOOLBAR_BUTTON_NEWFOLDER)
      && (XD_gnSelectedFolderCount != 1))
    {
    rv = XD_TOOLBAR_BUTTON_DISABLED;
    }
    else if

     ((button == XD_TOOLBAR_BUTTON_MOVE)
      && (XD_gnSelectedCount  == 0))
    {
    rv = XD_TOOLBAR_BUTTON_DISABLED;
    }
    else if

     ((button == XD_TOOLBAR_BUTTON_DELETE)
      && (XD_gnSelectedCount == 0))
    {
    rv = XD_TOOLBAR_BUTTON_DISABLED;
    }
    else if
     ((button == XD_TOOLBAR_BUTTON_RENAME)
      && (XD_gnSelectedCount != 1))
    {
    rv = XD_TOOLBAR_BUTTON_DISABLED;
    }
    else if
     (button == XD_TOOLBAR_BUTTON_VIEW)
    {
    rv = XD_TOOLBAR_BUTTON_DISABLED;
    if (XD_gnSelectedCount == 1 && XD_gnSelectedFolderCount ==  0)
          {
```

```
            rv = XD_TOOLBAR_BUTTON_ENABLED;
            }
      }
      else if
       (button == XD_TOOLBAR_BUTTON_SHARE)
      {
      rv = XD_TOOLBAR_BUTTON_DISABLED;
      if (XD_gnSelectedCount == 1 && XD_gnSelectedFolderCount ==  0)
            {
            rv = XD_TOOLBAR_BUTTON_ENABLED;
            }
      }

      return rv;
      }

// Wrapper for updating images, used for checking if the image exists before
// attempting to udpate it.

function XDImageUpdate (oImage,imgGraphic)
      {
      if (oImage)
            {
            // If the image exists then update it
            oImage.src = imgGraphic;
            }
      else
            {
            // otherwise do nothing
            }
      }

// Takes a button and an event, finds the status
// and then refreshes the button.

function XDrefreshButton (sButton, sEvent)
      {
      if (XD_gsAction == '') {
      var nStatus = XDtoolbarButtonStatus(sButton, sEvent);
      var oFrame = XD_goFrameControls;

      XD_gsPreviousGrove = grove;

      if (sButton == XD_TOOLBAR_BUTTON_UPLOAD)
            {

      XDImageUpdate(oFrame.document.img_upload,g_aimgUpload[nStatus].src);
            }
      else if (sButton == XD_TOOLBAR_BUTTON_DOWNLOAD)
            {

      XDImageUpdate(oFrame.document.img_download,g_aimgDownload[nStatus].src)
;
            }
      else if (sButton == XD_TOOLBAR_BUTTON_NEWFOLDER)
            {
            XDImageUpdate (oFrame.document.img_newfolder,
g_aimgNewFolder[nStatus].src);
            }
      else if (sButton == XD_TOOLBAR_BUTTON_MOVE)
            {
            XDImageUpdate(oFrame.document.img_move,g_aimgMove[nStatus].src);
            }
```

```
        else if (sButton == XD_TOOLBAR_BUTTON_RENAME)
              {

        XDImageUpdate(oFrame.document.img_rename,g_aimgRename[nStatus].src);
              }
        else if (sButton == XD_TOOLBAR_BUTTON_DELETE)
              {

        XDImageUpdate(oFrame.document.img_delete,g_aimgDelete[nStatus].src);
              }
        else if (sButton == XD_TOOLBAR_BUTTON_VIEW)
              {
              XDImageUpdate(oFrame.document.img_view,g_aimgView[nStatus].src);
              }
        else if (sButton == XD_TOOLBAR_BUTTON_SHARE)
              {

        XDImageUpdate(oFrame.document.img_share,g_aimgShare[nStatus].src);
              }
        }
}

//This refreshes all the buttons at one time.
function XDrefreshAllButtons()
      {
      XDrefreshButton(XD_TOOLBAR_BUTTON_UPLOAD, null);
      XDrefreshButton(XD_TOOLBAR_BUTTON_DOWNLOAD, null);
      XDrefreshButton(XD_TOOLBAR_BUTTON_NEWFOLDER, null);
      XDrefreshButton(XD_TOOLBAR_BUTTON_MOVE, null);
      XDrefreshButton(XD_TOOLBAR_BUTTON_RENAME, null);
      XDrefreshButton(XD_TOOLBAR_BUTTON_DELETE, null);
      XDrefreshButton(XD_TOOLBAR_BUTTON_VIEW, null);
      XDrefreshButton(XD_TOOLBAR_BUTTON_SHARE, null);
      }

// Wraper that handles button click events.
function XDbuttonClick (sButton)
      {
      XDrefreshButton(sButton, XD_EVENT_CLICK);
      }


// Wrapper that handles the button MouseOver events
function XDbuttonOver (sButton)
      {
      XDrefreshButton(sButton, XD_EVENT_MOUSEOVER);
      }


// Wrapper that handles teh button MouseOut events.
function XDbuttonOut (sButton)
      {
      XDrefreshButton(sButton, XD_EVENT_MOUSEOUT);
      }

function XDfunctionStatus(button)
      {
      if (! ControlsEnabled)
            {
            return false;
            }
```

```
    if (XDtoolbarButtonStatus(button, XD_EVENT_MOUSEOVER) ==
XD_TOOLBAR_BUTTON_ACTIVE)
            {
            return true;
            }
    else
            {
            return false;
            }
    }
```

//diskInfo.js

```
// NOTE: The table trick works differently in IE vrs Netscape.  In netscape
you need to
// have an   as a value within the TD's while in IE you do not need
anything.
function mresponse()
        {
      parent.parent.parent.frames['centerview'].document.location =
"../explorer/more_space_mail.html";

        }

function XDdisplayDiskInfo (oFrame)
{
      //3K always taken up by xdrive, public and private folders
      //changed code so it doesn't show as red any more
    var nUsed = XD_gnQuotaUsed;
    var nTotal = XD_gnQuotaTotal;

    //var nGraphWidth = XD_gnFileGraphWidth;
    var sGraphUsedColor = XD_gsUsedColor;
    var sGraphFreeColor = XD_gsFreeColor;

    var freeMB = nTotal - nUsed;
    var usedPercent = Math.round(100 * (nUsed/nTotal));

    ///// Do some basic bound checking
    if (usedPercent > 100)
        {
        usedPercent = 100;
        sGraphFreeColor = sGraphUsedColor;
        }
    if ( usedPercent < 0  )
       {
       usedPercent = 0;
       }

    var freePercent = 100-usedPercent;

    oFrame.write('<FORM name="controlForm">');

    oFrame.write('<TABLE width=500 border=0 cellpadding=0
cellspacing=0><TR>\n');
    oFrame.write('<TD width=300> </TD>\n');
    oFrame.write('<TD align="right" width=50><B><FONT size="-1">' +
XD_gsEmpty + '</FONT></B><img src="/images/spacer.gif" width=1
height=1></TD>\n');
    oFrame.write('<TD align="center" width=100>\n');
    oFrame.write('<TABLE width=100 CELLPADDING=0 CELLSPACING=0
BORDER=0><TR>\n');
if (usedPercent != 0)
{
oFrame.write('<TD height=10 WIDTH="' + usedPercent + '%" BGCOLOR="' +
sGraphUsedColor + '"><img src="/images/spacer.gif" width=1
height=1></TD>\n');
}
    oFrame.write('<TD height=10 WIDTH="' + freePercent + '%" BGCOLOR="' +
sGraphFreeColor + '"><img src="/images/spacer.gif" width=1
height=1></TD>\n');
    oFrame.write('</TR></TABLE>\n');
```

```
    oFrame.write('</TD><TD align="left" width=50><img
src="/images/spacer.gif" width=1 height=1><B><FONT size="-1">' + XD_gsFull +
'</FONT></B></TD>\n');

    oFrame.write('</TR>\n');
    oFrame.write('</TABLE>\n');

    if (usedPercent>90)
      {
      oFrame.write('<TABLE width=500 border=0 cellpadding=0
cellspace=0><TR><TD width=300><img src="/images/spacer.gif" width=300
height=1></TD><TD width=200 valign=center align=left><FONT size="-1"
face="verdana,arial">' + XD_gsOutOfSpace + '?<BR><A HREF="/cgi-
bin/addspace.cgi?action=intro" target="centerview">' + XD_gsBuyMore +
'</A></FONT></TD></TR></TABLE>');

      }


    oFrame.write('<input type="hidden" name="multipleSelect" value="N">');
    oFrame.write('</FORM>');
}

function XDSelectedList()
    {
    return XD_gsSelectedList;
    }

function XDSelectedFolder()
    {
    return
XD_gsSelectedFolderList.substring(0,XD_gsSelectedFolderList.length-1);
    }

/*****************************************************************************
* XDCleanupPath: Cleanup the passed path by removing the "/X:drive/" prefix
* and the + postfix.
*****************************************************************************/
function XDPathCleanup(sPath)
    {
    var sCopy = sPath;
    sCopy = sCopy.substring(9,sCopy.length)
            //sCopy = sCopy.substring(0,sCopy.length-1);
            return sCopy;
    }

function XDMultiSelect (sValue)
    {
    if (sValue != 'null' && sValue != "")
        {
        m_sMultiSelect = sValue;
        }
    else
        {
        return m_sMultiSelect;
        }
    }

function HTMLNavigation ()
    {
    var sHTML = HTMLStart()
                +'<table width="100%" border="0" cellspacing="0"
cellpadding="0">'
```


NSDOCID: <WO_____0133381A1_IA>

```
                +'<tr align="left" valign="top" bgcolor="#5EB114">'
                +'<td><img src="/images/main/logo_top.gif" width="153"
height="28"></td>'
                +'</tr><tr>'
                +'<td><img src="/images/main/logo_center.gif" width="171"
height="97" alt="X:drive"></td>'
                +'</tr><tr>'
                +'<td><img src="/images/main/race_logo_bottom.gif"
width="171" height="35"></td>'
                +'</tr></table>'
                +'<a target="toolbar" href="http://www.mit.edu">MIT</a>'
                +'</BODY>\n</HTML>';
    return sHTML;
    }

function HTMLStart ()
    {
    return "<HTML>\n"
    +'<body bgcolor="#6961AB" topmargin="0" leftmargin="0" marginheight="0"
marginwidth="0" text="#FFFFFF" vlink="#FFFFFF" alink="#FFFFFF" link="#FFFFFF"
{onload}>'
    +"\n";
    }

function HTMLEnd ()
    {
    return "\n</BODY>\n</HTML>\n";
    }

function RedrawToolBar()
    {
    var sWindow = 'window.toolbar';
    sWindow.document.write(HTMLStart()+'test'+HTMLEnd());
    }

function roundOff(value, precision)
      {
      value += .000000001;
      part = "" + parseInt(value);
      size = part.length;
        value = "" + value; //convert value to string
      return value.substring(0,size+1+precision);
      }

function XDDiskUsed()
{
      var nUsed = XD_gnQuotaUsed;
      var nUsedMB = nUsed/1024;
      var nRound = roundOff(nUsedMB,2);
      var sRounded;

//    if (nUsed < 1024)
//          {
//          sRounded = '.'+nRound;
//          }
//    else
//          {
          sRounded = nRound;
//          }

      return sRounded;
}
```

```
function XDDiskTotal()
{
      var nTotal = XD_gnQuotaTotal;
      var nTotalMB = nTotal/1024;
      var nRound = roundOff(nTotalMB,2);
      var sRounded;

//    if (nTotal < 1024)
//          {
//          sRounded = '.'+nRound;
//          }
//    else
//          {
          sRounded = nRound;
//          }

      return sRounded + ' MB';
}

function XDDiskFree()
      {
      var nUsed = XD_gnQuotaUsed;
      var nTotal = XD_gnQuotaTotal;

      var nFreeMB = (nTotal - nUsed)/1024;
      var nRound = roundOff(nFreeMB,2);
      var sRounded;

//    if (nFreeMB < 1)
//          {
//          sRounded = '.'+nRound;
//          }
//    else
//          {
          sRounded = nRound;
//          }

      return sRounded + ' MB';
      }
```


NSDOCID: <WO_____0133381A1_IA>

//launch.js

```
/*****************************************************************************
* XDExplorerLaunch: Launch the passed explorer URL in a popup window.
*****************************************************************************/

function XDExplorerLaunch (
      sURL, //*** (I) The URL to open in the popup window
      nHeight, //*** (I) The height of the popup
      nWidth) //*** (I) The width of the popup
      {
      var w =
window.open(sURL,"XDriveExplorer","location=no,toolbar=no,menubar=yes,"+
            "status=no,resizable=no,scrolling=yes,scrollbars=no,"+
            "width="+nWidth+",height="+nHeight);

      //*** make sure the opener knows who the parent is
      if (w.opener == null) w.opener = self;

      //*** focus on the newly created window
      w.focus();
      }

function XDExplorerURL()
      {
      return '/cgi-bin/explorer.cgi';
      }

function XDDataURL()
      {
      return '/cgi-bin/explorer_data.cgi';
      }
```


PNSDOCID: <WO 0133381A1 |A>

//nav.js

```
// Added by Julie Wang 111999
//
// Function is used with <a href> to pop up another window to show X:drive's
Terms of Service
// page

function toc()
{
var url, window_name;

url="/company/toc.html";
window_name="toc";
window.open(
            url,
            window_name,

'toolbar=no,menubar=no,scrollbars=yes,fullscreen=no,resizable=no,width=650,he
ight=400'
            );
return;
}

// Added by Julie Wang 122199
//
// Function is used with <a href> to pop up another window to show a
// sample letter when someone use "Tell A Friend" feature.

function tell_a_friend_sample_email()
{
var url, window_name;

url="/generic_join_sample_email.html";
window_name="toc";
window.open(
            url,
            window_name,

'toolbar=no,menubar=no,scrollbars=yes,fullscreen=no,resizable=no,width=650,he
ight=400'
            );
return;
}

// Added by Julie Wang 102699
//
// Function writes the side bar nav. menu/buttons on general HTML pages for
every visitors.

function left_menu()
{
  document.write('<table width=\"138\" border=\"0\" cellspacing=\"0\"
cellpadding=\"0\">\n');
  document.write('<tr align=\"left\" valign=\"top\">\n');
  document.write('<td><a href=\"http://www.xdrive.com\"><img
src=\"/graphics/internal/btn_xdrivehome.gif\" width=\"138\" height=\"19\"
alt=\"X:drive Home\" border=\"0\"></a><br><img
src=\"/graphics/internal/divider.gif\" width=\"138\" height=\"5\"
alt=\"Divider\"></td>\n');
  document.write('</tr>\n');
```


\SDOCID: <WO_____0133381A1_IA>

```
  document.write('<tr align=\"left\" valign=\"top\">\n');
  document.write('<td>\n');
  document.write('<table width=\"138\" border=\"0\" cellspacing=\"0\"
cellpadding=\"0\" background=\"/graphics/internal/lines.gif\">\n');
  document.write('<tr align=\"left\" valign=\"top\">\n');
  document.write('<td width=\"38\"><img src=\"/graphics/internal/icon-
new.gif\" width=\"38\" height=\"31\" alt=\"New\"></td>\n');
  document.write('<td align=\"left\" valign=\"middle\" width=\"100\"><b><font
face=\"Arial, Helvetica, sans-serif\" size=\"2\"><a
href="/company/new.html\">What\'s New</a></font></b></td>\n');
  document.write('</tr>\n');
  document.write('<tr align=\"left\" valign=\"top\">\n');
  document.write('<td width=\"38\"><img src=\"/graphics/internal/icon-
about.gif\" width=\"38\" height=\"34\" alt=\"About X:drive\"></td>\n');
  document.write('<td align=\"left\" valign=\"middle\" width=\"100\"><b><font
face=\"Arial, Helvetica, sans-serifv size=\"2\"><a
href=\"/company/company.html\">About X:drive</a></font></b></td>\n');
  document.write('</tr>\n');
  document.write('<tr align=\"left\" valign=\"top\">\n');
  document.write('<td width=\"38\"><img
src=\"/graphics/internal/icon_desktop.gif\" width=\"38\" height=\"28\"
alt=\"Desktop X:drive\"></td>\n');
  document.write('<td align=\"left\" valign=\"middle\" width=\"100\"><b><font
face=\"Arial, Helvetica, sans-serif\" size=\"2\"><a
href=\"/company/main_download.html\">Desktop X:drive</a></font></b></td>\n');
  document.write('</tr>\n');
  document.write('<tr align=\"left\" valign=\"top\">\n');
  document.write('<td width=\"38\"><img src=\"/graphics/internal/icon-
affiliates.gif\" width=\"38\" height=\"28\" alt=\"Affiliates\"></td>\n');
  document.write('<td align=\"left\" valign=\"middle\" width=\"100\"><b><font
face=\"Arial, Helvetica, sans-serif\" size=\"2\"><a
href=\"/affiliates/befree/index.html\">X:drive
Affiliate</a></font></b></td>\n');
  document.write('</tr>\n');
  document.write('<tr align=\"left\" valign=\"top\">\n');
  document.write('<td width=\"38\"><img src=\"/graphics/internal/icon-
faq.gif\" width=\"38\" height=\"32\" alt=\"FAQs\"></td>\n');
  document.write('<td align=\"left\" valign=\"middle\" width=\"100\"><b><font
face=\"Arial, Helvetica, sans-serif\" size=\"2\"><a
href=\"/company/faq.html\">FAQ</a></font></b></td>\n');
  document.write('</tr>\n');
  document.write('</table>\n');

  document.write('</td>\n');
  document.write('</tr>\n');
  document.write('<tr align=\"left\" valign=\"top\">\n');
  document.write('<td><a href=\"/cgi-bin/signup_form.cgi\"><img
src=\"/graphics/internal/sign-up-now.gif\" width=\"138\" height=\"58\"
alt=\"Sign Up Now !\" border=\"0\"></a></td>\n');
  document.write('</tr>\n');
  document.write('<tr align=\"left\" valign=\"top\">\n');
  document.write('<td><img src=\"/graphics/internal/whats-hot.gif\"
width=\"138\" height=\"19\" alt=\"What\'s Hot ?\"><br><img
src=\"/graphics/internal/divider.gif\" width=\"138\" height=\"5\"
alt=\"Divider\"></td>\n');
  document.write('</tr>\n');
  document.write('<tr align=\"left\" valign=\"top\">\n');
  document.write('<td><a href=\"/freebies/english/freebiesout.html\"><img
src=\"/graphics/internal/freebies.gif\" width=\"138\" height=\"82\"
alt=\"Check Out Freebies -  Click Here\" border=\"0\"></a><br><img
src=\"/graphics/internal/divider.gif\" width=\"138\" height=\"5\"
alt=\"Divider\"></td>\n');
  document.write('</tr>\n');
```

```
  document.write('<tr align=\"left\" valign=\"top\">\n');
  document.write('<td><a href=\"/company/main_download.html\"><img
src=\"/graphics/internal/btn_get_application.gif\" width=\"138\"
height=\"82\" alt=\"Download the desktop application!\"
border=\"0\"></a><br><img src=\"/graphics/internal/divider.gif\"
width=\"138\" height=\"5\" alt=\"Divider\"></td>\n');
  document.write('</tr>\n');
  document.write('<tr align=\"left\" valign=\"top\">\n');
  document.write('<td><a href=\"/demo/index.html\"><img
src=\"/graphics/internal/btn_skipdownload.gif\" width=\"138" height=\"82"
alt=\"Skip the download!\" border=\"0\"></a><br><img
src=\"/graphics/internal/divider.gif\" width=\"138\" height=\"5\"
alt=\"Divider\"></td>\n');
  document.write('</tr>\n');
  document.write('</table>\n');

  document.close();
  return true;
}

// Added by Martin Hald
function PathRemovePrefix(path)
    {
    return path.substring(10,path.length);
    }

// Function that redraws the file explorer

function show()
{
      var oDocument = FrameObject();

      oDocument.open("text/html");
      oDocument.write("<html>\n");
      oDocument.write("<head>\n");

      oDocument.write("</head>\n");
      oDocument.write('<body BGCOLOR="'+ XDBackgroundColor() + '"
BACKGROUND="' + XDBackgroundImage() + '">');
      oDocument.write(XD_sNewdoc);

      XDdisplayDiskInfo(oDocument);

      oDocument.write("</body>\n");
      oDocument.write("</html>\n");
      oDocument.close();
      XDrefreshAllButtons();
}

// parses the XML tree from the top frame and first calls show.
// This must be called on load of the main page.
function process(sExtra)
    {
      if (XD_gsAction == '')
      {
            grove = Xparse(XD_gsXML);


            //this resets the variables that track how many files and folders
are selected
            //don't reset if we are going into an action
            XDresetSelected();
```

```
      }

      // If we have just performed an action that involved a folder then
      // we will open that folder so the user can see the results of the
      // action.  To do so we update the old directory listing so that
      // the directory from which the action took place gets opened.
      if (XD_gnSelectedFolderID != '')
      {
            XD_gsPreviousGrove.index[XD_gnSelectedFolderID].attributes.show =
1;
      }

      // Now sync the view of the filesystem between the current and
      // previous views.
      synch(XD_gsPreviousGrove, grove);

      //reset attributes.selected for all items so that blue line does not
get drawn
      XDresetAllSelected();
    }


function BuildUpload()
{
      var oDocument = FrameObject();
      XD_gsActionUpload = true;
      HTMLGenericStart(oDocument);

      // var rand_num = parent.createRandomID();
      var rand_num = createRandomID();

      if (XD_gbExtraHelp)
      {
            oDocument.write(XDHelp(XD_gsHelpFileUpload));
      }

      oDocument.write("</TABLE>\n");

      oDocument.write('<p>\n');
      oDocument.write(XDHelp(XD_gsClientAd));
      oDocument.write('</p>\n');

      oDocument.write('<form name="form_upload" method="POST" action="/cgi-
bin/file_save.cgi" onSubmit="return
parent.parent.parent.openUpload(parent.parent.parent.XDCheckFormInput(),\'/cg
i-bin/file_upload_stat.cgi?id='+rand_num+'\',\'window\',(this));"
TARGET="centerview"');

      // oDocument.write('<form name="form_upload" method="POST"
action="/cgi-bin/file_save.cgi" onSubmit="return
(parent.parent.parent.XDCheckFormInput());" TARGET="centerview"');

      oDocument.write(' enctype="multipart/form-data">'+"\n");
      var results = '';
      results += '<input type="hidden" name="sFolderCurrent" value="'+
XDSelectedFolder() +'">\n';
      oDocument.write(results);

        oDocument.write('<input type=hidden name=id value='+rand_num+'>');

      oDocument.write('<TABLE cols=2>'+"\n");

      for (var i=1; i<=5; i++)
```


BNSDOCID: <WO 0133381A1 IA>

```
        {
        oDocument.write('<tr><td valign="top" width="30"><FONT face="verdana,
arial, sans" size="-1"><b>' + XD_gsFile + i + ': </b></FONT></td><td><FONT
face="verdana, arial, sans" size="-1"><input type="file"
name="file_to_upload_0' + i + '" size="20"></FONT></td></tr>'+"\n");
        }
        oDocument.write('</tr>'+"\n");
        oDocument.write('<tr valign="top"> '+"\n<td colspan=2>\n");
        oDocument.write('<center>'+"\n");
        oDocument.write(XDFormSubmitButtons());
        oDocument.write('</center>'+"\n");
        oDocument.write('</td>'+"\n");
        oDocument.write('</tr>'+"\n");
        oDocument.write('</TABLE>');
        oDocument.write('</body>'+"\n");
        oDocument.write('</html>'+"\n");
        oDocument.close();
        XD_gnFrameHeight='85';
        return true;
}

function BuildCreate()
{
        var oDocument = FrameObject();
        HTMLGenericStart(oDocument);

        if (XD_gbExtraHelp)
        {
                oDocument.write(XDHelp(XD_gsHelpCreateFolder));
        }

        oDocument.write('<form name="form_create" action="/cgi-
bin/folder_create.cgi" method="POST" onSubmit="return
parent.parent.parent.XDCheckFormInput();" target="centerview">');
        var results = '';
        results += '<input type="hidden" name="sFolderCurrent" value="'+
XDSelectedFolder() +'">\n';
        oDocument.write(results);
        oDocument.write('<tr><td valign=center><B>'+ XD_gsFolderName +':</b>');
        oDocument.write('<input type="text" name="sFolderNew" value=""><br>');
        oDocument.write(XDFormSubmitButtons());
        oDocument.write('</td></tr>');

        oDocument.write('</TABLE>');
        oDocument.write('</body>'+"\n");
        oDocument.write('</html>'+"\n");
        oDocument.close();
        XD_gnFrameHeight='85';
        return true;
}

function BuildRename()
{
        var oDocument = FrameObject();
        HTMLGenericStart(oDocument);

        if (XD_gbExtraHelp)
        {
                oDocument.write(XDHelp(XD_gsHelpFolderRename));
        }
```


NSDOCID: <WO_____0133381A1_IA>

```
      oDocument.write('<form method="POST" name="form_rename" action="/cgi-
bin/selected_rename.cgi" onSubmit="return
parent.parent.parent.XDCheckFormInput();"');
      oDocument.write(' target="centerview" value="'+XDSelected()+'">\n');
      var results = '';
      results += '<input type="hidden" name="sFolderCurrent"
value="'+XDSelectedFolder()+'">\n';
      oDocument.write(results);
      oDocument.write('<tr><td valign=center><B>' + XD_gsNewName + ':</b>');
      oDocument.write('<input type="hidden" name="sItemCurrent" value="'+
XDSelected() +'">\n');

      if (XDProfileEditExtensions)
      {
            oDocument.write('<input type="text" name="sItemNew" value="' +
XDSelectedThingName()+'">\n');
            oDocument.write('<input type="hidden" name="sItemExtension"
value="">\n');
      }
      else
      {
            oDocument.write('<input type="text" name="sItemNew"
value="'+XDSelectedThingNameMinusExtension()+'">'+XDSelectedThingNameExtensio
n()+'\n');
            oDocument.write('<input type="hidden" name="sItemExtension"
value="'+XDSelectedThingNameExtension()+'">\n');
      }
      oDocument.write(XDFormSubmitButtons());
      oDocument.write('</td></tr>');
      oDocument.write('</TABLE>');
      oDocument.write('</body>'+"\n");
      oDocument.write('</html>'+"\n");
      oDocument.close();
      XD_gnFrameHeight='85';
      return true;
}

function BuildDelete()
{
      var oDocument = FrameObject();
      HTMLGenericStart(oDocument);

      var pathToFile = XDSelected();
      var lastSlash = pathToFile.lastIndexOf('/');
      var file = pathToFile.substring(lastSlash+1,pathToFile.length);

      if (XD_gbExtraHelp)
      {
            oDocument.write(XDHelp(XD_gsHelpDelete));
      }
      oDocument.write('<form name="form_delete" action="/cgi-
bin/selected_delete.cgi" method="POST" onSubmit="return
parent.parent.parent.XDCheckFormInput();" target="centerview">');
      var results = '';
      results += '<input type="hidden" name="sFolderCurrent" value="'+
XDSelectedFolder() +'">\n';
      oDocument.write(results);
      oDocument.write('<tr><td valign=center><B>' + XD_gsSureDelete + ' ' +
file + '?</b>');
      oDocument.write('<input type="hidden" name="sItemCurrent" value="' +
XDSelected() + '"><br>');
      oDocument.write('<input type="hidden" name="sFolderCurrent" value="' +
XDSelectedFolder() + '"><br>');
```

```
        oDocument.write(XDFormSubmitButtons());

        oDocument.write('</td></tr>');
        HTMLGenericEnd(oDocument);
        XD_gnFrameHeight='85';
        return true;
}


function BuildExplorer (grove,sStartDirectory)
{
        var returnValue = true;

        if (XD_gsAction == 'Upload')
        {
              returnValue = BuildUpload();
        }
        else if (XD_gsAction == 'Create')
        {
              returnValue = BuildCreate();
        }
        else if (XD_gsAction == 'Rename')
        {
              returnValue = BuildRename();
        }
        else if (XD_gsAction == 'Delete')
        {
              returnValue = BuildDelete();
        }
        else
        {
              var result = '';
              var nDepth = -2;

              result += '<TABLE compact border=0 cellspacing=0 cellpadding=4
width="'+ XD_gnExplorerTableWidth +'">\n';
              result += XDFormSubmitButtons(1);

              result += "<tr><th align=\"left\">"+ XDExplorerFont() + '<font
size="2">' + XDPossesive(XD_gsFirstName + ' ' + XD_gsLastName) + " X:drive
<BR>"
              +XDDiskTotal()+" "+XD_gsCapacity+", "
              +XDDiskFree()+" "+XD_gsRemaining
              +"</th><th align=\"left\">"+


               XDExplorerFont()+'<font size="2">'+ XD_gsSize + "</th><th
align=\"left\">"+
               XDExplorerFont()+'<font size="2">'+ XD_gsLastModified +
"</th></tr>\n";
              result += dotag(grove, sStartDirectory, nDepth);
              result += "</TABLE>\n";
              XD_sNewdoc = result;

              show();

                  //johngaa 11/22/99
                  //Highlight bug fix
                  if (XD_gsXOffset || XD_gsYOffset)
                  {
                    XD_goFrameFileExplorer.scrollTo(XD_gsXOffset,XD_gsYOffset);
                  }
                  //end of johngaa bug fix
```


3NSDOCID: <WO_____0133381A1_IA>

```
        }
        return returnValue;
}

function XDPossesive(name)
{
        var length = name.length;
        var lastChar = name.charAt(length-1);
        var possesive=name + "'s";
        if (lastChar == 's')
                {
                possesive = name + "'";
                }
        return possesive;
}

function XDExplorerFont()
    {
    return '<font face="verdana, arial, sans">';
    }

// constructs the HTML from the file explorer from the parsed XML
function dotag(tag, path, nDepth)
{
        path += '/' + tag.name;

        var result = '';
        var sCellColor = new String();
        var sIconImage = new String();
        var sFolderPointer = new String();
        var fileSize = new String();
        var fileString = new String();

        var sDate;    // The last modified date and time stamp


          //johngaa 11/23/99
          //highlight netscape bug fix
        // var sFlipFunction = new String('parent.parent.parent.flip(' +
tag.uid + ')');
          if (navigator.appName == "Netscape")
          {
           var sFlipFunction = new String('parent.parent.parent.flip(' +
tag.uid + ',window.pageXOffset,window.pageYOffset)');
          }
          else
          {
           var sFlipFunction = new String('parent.parent.parent.flip(' +
tag.uid + ',document.body.scrollLeft,document.body.scrollTop)');

          }

          //johngaa orginal 11/22/99
          //highlight netscape bug fix
        //var sSelectToggleFunction = new
String('parent.parent.parent.XDselectToggle(' + tag.uid + ')');
          if (navigator.appName == "Netscape")
          {
           var sSelectToggleFunction = new
String('parent.parent.parent.XDselectToggle(' + tag.uid +
',window.pageXOffset,window.pageYOffset)');
          }
```


BNSDOCID: <WO 01333881A1 IA>

```
        else
        {
         var sSelectToggleFunction = new
String('parent.parent.parent.XDselectToggle(' + tag.uid +
',document.body.scrollLeft,document.body.scrollTop)');
        }
        //end of johngaa bug fix

       // If the object is selected,
       // then add it to the selected arrays
       // and up the selected counts
       // and set the cell color to selected

       //set background color of the cells depending on status:  selected,
move or at rest
       if (tag.attributes.selected)
       {
             XD_gnSelectedCount=1;
             sCellColor =XD_gsSelectedColor;
             XD_gsSelectedList += PathRemovePrefix(path) + '+';

             if (tag.attributes.folder)
             {
                   XD_gnSelectedFolderCount=1;
                   XD_gnSelectedFolderID = tag.uid;
                   XD_gsSelectedFolderList += PathRemovePrefix(path) + '+';
             }
             else
             {
                   XD_gnSelectedFileCount=1;
             }
       }
       else if (tag.attributes.move)
       {
             // ELSE IF, it is set to move,
             // Then change the colors and
             sCellColor = XD_gsMoveSelectedColor;
       }
       else
       {
             // ELSE, set the cell color to not selected
             sCellColor = XD_gsNotSelectedColor;
       }


       if (tag.attributes.folder)
       {
             // SET special graphics and links for folder.
             nDepth++;

             if (tag.attributes.show)
             {
                   if (tag.attributes.move)
                   {
                         // The folder is open
                         sFolderPointer =  '<IMG SRC="' +
XD_gimgOpenFolderPointer + '" BORDER="0">\n';
                         sIconImage = '<IMG SRC="' + XD_gimgOpenFolder +'"
BORDER="0" ALIGN="absmiddle" '+"\n\t"+ 'HSPACE="2" VSPACE="0" HEIGHT="16"
WIDTH="16">';
                   }
                   else
                   {
```


INSDOCID: <WO_____0133381A1_IA>

```
                        sFolderPointer =  '<A HREF="javascript:' +
sFlipFunction + ';"><IMG SRC="' + XD_gimgOpenFolderPointer + '"
BORDER="0"></A>\n';
                        sIconImage = '<IMG SRC="' + XD_gimgOpenFolder +'"
BORDER="0" ALIGN="absmiddle" '+"\n\t"+ 'HSPACE="2" VSPACE="0" HEIGHT="16"
WIDTH="16">';
                  }
            }
            else
            {
            sFolderPointer =  '<A HREF="javascript:' + sFlipFunction +
';"><IMG SRC="' + XD_gimgClosedFolderPointer + '"' +"\n"+ '
BORDER="0"></A>\n';
            sIconImage = '<IMG SRC="' + XD_gimgFolder + '" BORDER="0"
ALIGN="absmiddle" '+"\n\t"+ 'HSPACE="2" VSPACE="0" HEIGHT="16" WIDTH="16">';
            }
      }
      else
      {
            // This is a file and not a folder so show a FILE icon and do not
show any + or -
            sFolderPointer = ExplorerBlankFolderPointer();
            sIconImage = '<IMG SRC="' + XD_gimgFile + '" BORDER="0"
ALIGN="absmiddle" '+"\n\t"+ 'HSPACE="4" VSPACE="0">';
      }



      if (tag.attributes.size)
      {
            // SET file size indicator is attribute is present
            fileSize = XDExplorerFont()+tag.attributes.size+'k';
      }
      else
      {
            fileSize = ' ';
      }

      if (tag.attributes.lastModified)
      {
            sDate = tag.attributes.lastModified;
      }
      else
      {
            sDate = ' ';
      }

      if (tag.attributes.move)
      {
            fileString= sIconImage;
      }
      else
      {
            fileString = '<A HREF="javascript:' + sSelectToggleFunction +
';">'+ '\n' + sIconImage;
      }

      if ((tag.attributes.folder) || (!XDAction('Move')) ||
(tag.attributes.move))
      {
            // ONLY show IF it is (a folder or not in moving)
            // OR the object is question is being moved.
            result += '<A NAME="' + tag.name + '"></A><TR>';
```

```
            result += '<TD BGCOLOR="' + sCellColor + '"
valign="absmiddle"><p>';
            result += "\n";
            result += "\n";
            result += _indent(nDepth);
            result += sFolderPointer;
            result += fileString;
            result += XDExplorerFont();
            result += '<FONT SIZE="2">';
            result += tag.name;
            result += '</A></TD>';
            result += "\n";
            result += "\n";
            result += '<TD BGCOLOR="' + sCellColor + '"
valign="absmiddle"><p><FONT SIZE="2">' + fileSize + '</FONT></TD>';
            result += '<TD BGCOLOR="' + sCellColor + '"
valign="absmiddle"><p><FONT SIZE="2">';
            result += XDExplorerFont();
            result += sDate;
            result += "</FONT></td>\n";

            result += '</TR>';
            result += "\n";
      }

      if (tag.attributes.show)
      {
            for (var i = 0; i < tag.contents.length; i++)
            {
                  if (tag.contents[i].type == "element")
                  {
                        // To sort we simply recursivly call ourselves with
the next element
                        // in the sort order
                        result += dotag(tag.contents[i], path, nDepth);
                        result += "\n";

                  }
            }
      }

      return result;
}


function ExplorerBlankFolderPointer ()
    {
    return '<IMG SRC="/images/explorer/fnot.gif" WIDTH=15 HEIGHT=15
BORDER=0>\n';
    }

// returns a true if the tag has any children that are selected
function XDopenChild(tag, children)
    {
    var result = false;

    if (children)
        {
            if ((tag.attributes.selected) || (tag.attributes.move))
            {
                  //added so user can close folder if items are selected
                  //deselects item in folder if folder is closed
                  tag.attributes.selected=false;
```


NSDOCID: <WO_____0133381A1_IA>

```
                //original
                return true;
            }
        }

    for (var i = 0; i < tag.contents.length; i++)
        {
        if (tag.contents[i].type == "element")
            {
            if (XDopenChild(tag.contents[i], 1))
                {
                //added so user can close folder if items are selected
                //deselects item in folder if folder is closed
                grove.index[i].attributes.selected = false;
                return false;

                //original
                //return true;
                }
            }
        }

    return result;

    }


function _indent (count)
    {
    var spaces = '';
    for (i=0; i<=count; i++)
        {
        spaces += '    ';
        }
    return spaces;
    }

// This is called when a item name is clicked,
// either flipping it open or closed

//original johngaa 11/23/99
//highlight netscape bug fix
//original function flip(id)
function flip(id,xoffset,yoffset)
    {
    //johngaa 11/23/99
    //highlight netscape bug fix
    XD_gsYOffset = yoffset;
    XD_gsXOffset = xoffset;

    //end of johngaa add
    XDresetSelected();

    // before closing, check to see if it has selected children.
    // If child is selected, then do not allow to close dir.
    if (!XDopenChild(grove.index[id], 0))
        {
            if (grove.index[id].attributes.show == 1)
            {
                grove.index[id].attributes.show = 0;
            }
            else
```


BNSDOCID: <WO 0133381A1 IA>

```
            {
                grove.index[id].attributes.show = 1;
            }
        }

    BuildExplorer(grove,XD_gsRootDirectory);
    }

// This is called when an item icon is clicked, causing
// it to toggle between selected and not selected

//original johngaa 11/22/99
//highlight netscape bug fix
//function XDselectToggle(id)
function XDselectToggle(id,xoffset,yoffset)
{

    //johngaa 11/22/99
    //highligt bug fix
    XD_gsYOffset = yoffset;
    XD_gsXOffset = xoffset;
    //end of johngaa bug fix


    // Martin to solve bug where we log in and we get the error grove.index
    // is not an object
    if (! grove.index)
        {
        return;
        }

     if (id>=0)
     {
          XDresetSelected();

          if (grove.index[id].attributes.selected)
          {
               grove.index[id].attributes.selected = false;
          }
          else
          {
               XDresetAllSelected();
               XD_gnSelectedCount++;
               grove.index[id].attributes.selected = true;
               if (grove.index[id].attributes.folder)
               {
                   XD_gnSelectedFolderCount++;
                   grove.index[id].attributes.show = 1;
               }
               else
               {
                   XD_gnSelectedFileCount++;
               }
          }
     }
     else
     {
          XDresetAllSelected();
     }
     //if this is the page generated directly after a login
     //make XDrive the default and select it
     //then reset variable so we no longer select Xdrive as the default
```


VSDOCID: <WO_____0133381A1_IA>

```
        if (XD_gnLogin==1)
        {
              grove.index[0].attributes.selected=true;
              XD_gnLogin=0;
        }

       //this is called every time the file explorer changes
       //including creates, moves, deletes and renames
       //use a setTimeout for NS on NT because otherwise the
       //browser crashes if there is no wait period
       setTimeout("BuildExplorer(grove,XD_gsRootDirectory)",50);
       //BuildExplorer(grove,XD_gsRootDirectory);


}



// function to check to see if the root is selected
function XDRootSelected()
    {
    if (grove.index[0].attributes.selected)
        {
        return true;
        }
    return false;
    }

// This sets a selection to a value
function XDselect (id,value)
    {
    // Martin to solve bug where we log in and we get the error grove.index
    // is not an object
    if (!grove.index)
        {
        return;
        }

    if (grove.index[id].attributes.folder)
        {
        grove.index[id].attributes.selected = true;
        grove.index[id].attributes.show = value;
        }
    }


// DeSelects everything if so that only one thing can be selected
// at a time, unless the the multipleSelect checkbox from myFrom
// is selected.
function XDresetAllSelected()
    {
    var length = grove.index.length;

    for (var i =0; i < length; i++)
        {
        grove.index[i].attributes.selected = 0;
        }
    }

function XDresetAllMovedSelected()
    {
    // Martin bug fix -- after the first login could not show X:drive
    if (!grove.index)
```


ISDOCID: <WO_____0133381A1_IA>

```
        {
        return;
        }

    var length = grove.index.length;

    var oFrame = XD_goFrameUsageInfo;
    for (var i =0; i < length; i++)
        {
        grove.index[i].attributes.move = 0;
        }
    }

// resets the number of selected, called by both flip and XDselectToggle
function XDresetSelected()
    {
    XD_gsSelectedList = '';
    XD_gnSelectedCount = 0;
    XD_gnSelectedFolderCount =0;
    XD_gnSelectedFileCount =0;
    XD_gsSelectedFolderList = "";
    }

function strip(str)
    {
    var A = new Array();

    A = str.split("\n");
    str = A.join("");
    A = str.split(" ");
    str = A.join("");
    A = str.split("\t");
    str = A.join("");

    return str;
    }

function entity(str)
    {
    var A = new Array();

    A = str.split("&");
    str = A.join("&amp;");
    A = str.split("<");
    str = A.join("&lt;");
    A = str.split(">");
    str = A.join("&gt;");

    return str;
    }

function synch (prev_grove, new_grove)
{
    var prev_tag, new_tag, pi, ni;

    if (! prev_grove)
        {
      //set a flag so we know the first time a user logs in
      //there will be no prev_grove in this one case
      //flag is used to show blue bar on XDrive folder only right after
logging in
      XD_gnLogin=1;
      return;
```

```
        }
    //NS4.05 doesn't like this syntax
    //change to new syntax
    //if (! prev_grove.attributes)
        if (prev_grove.attributes!='')
            {
            return;
            }

        if (! new_grove.contents)
            {
            return;
            }

          if (prev_grove.attributes.show)
          {
                pi = 0;

                for (var ni = 0; ni < new_grove.contents.length; ni++)
                {
                      if (new_grove.contents[ni].type == "element")
                      {
                            if (prev_grove.contents[pi])
                            {
                                  prev_tag = prev_grove.contents[pi];
                            }

                            if (new_grove.contents[ni])
                            {
                                  new_tag = new_grove.contents[ni];
                            }

                           if ((prev_tag) && (new_tag))
                           {
                                 if (prev_tag.name == new_tag.name)
                                 {
                                       // Make sure the contents for this object
exists before checking them
                                       // to avoid javascript "has no
properties" errors.
                                       if (prev_grove.contents[pi])
                                       {
                                            new_grove.contents[ni].attributes =
prev_grove.contents[pi].attributes;
                                       }
                                 }
                                 else if (prev_tag.name > new_tag.name)
                                 {
                                       pi++;
                                 }
                                 else
                                 {
                                       ni++;
                                 }
                           }
                           synch(prev_grove.contents[pi],
new_grove.contents[ni]);
                      }

                      pi++;
                }
          }
}
```


3DOCID: <WO_____0133381A1_IA>

PAISDOCID:<WO 0133381A1 IA>

//saveToXdrive.js

```
var win = external.menuArguments;

ExtMen = external.menuArguments;
ExtMenTag = ExtMen.event.srcElement;
ExtMenDoc = ExtMen.document;

var url;


function findAnchor(el) {

  while ((el!=null) && ((el.tagName!="A") && (el.href!="")))
    el = el.parentElement;
  return el;

}


function findUrl() {
   var re;
   var IMGinsideLink = false;

   //alert("Tag name is " + ExtMenTag.tagName);

   switch ( ExtMenTag.tagName ) {
   // if a "LINK", return the link's URL
   case "A" :
      url = ExtMenTag.href;
      break;

  case "TD":
      var el = win.document.selection.createRange();
      a = findAnchor(el.parentElement(0));
      if (a != null)
          {
          url = a.href;
          }
      break;

    // if it was an image, then this gets complicated:
 case "IMG" :

    // check all links to make sure we aren't in one:
     for ( count = 0; count < ExtMenDoc.links.length; count++ )
        if ( ExtMenDoc.links( count ).contains( ExtMenTag ) ) {
           IMGinsideLink = true;
           break;
           }


    // if none was found, return the image URL:
    if ( !IMGinsideLink )
       url = ExtMenTag.src;
    else {

       url = ExtMenDoc.links( count ).href;
    }
    break;
```


DOCID: <WO_____0133381A1_IA>

```
default:
    url = ExtMenDoc.href;
    break;
    }

// Replace "."
re = /%2e/g;
url = url.replace(re, ".");

// Replace ":"
re = /%3A/g;
url = url.replace(re, ".");


// See if from hotfiles ZD-Net
if (url.indexOf("hotfiles.zdnet") != -1)
    {
    var startIndex;
    var endIndex;

    startIndex = url.indexOf("refresh_url=");
    if (startIndex != -1)
       {
       startIndex += 12;
       endIndex = url.indexOf("&", startIndex);

       if (endIndex != -1)
          {
          url = url.substring(startIndex, endIndex);
          }
       }
    }
 // see if from "download.com" C-Net
 else if (url.indexOf("download.com") != -1)
    {
    var indexHttp;
    var indexFtp;

    indexHttp = url.lastIndexOf("http://");
    indexFtp = url.lastIndexOf("ftp://");
    index = indexHttp;
    if (indexFtp > indexHttp)
       index = indexFtp;

    //alert( "index is " + index );

    if (index > 0)
       {
       var tempUrl;

       tempUrl = url.substr(index);
       url = tempUrl;
       }
     }


}

findUrl();

//alert("begin");
//alert(url);
```

```
// Call X:Drive to perform actual copy

xd_skip(url);
```


SDOCID: <WO_____0133381A1_IA>

//secure_login.js

```
//
//  Written 12/1/99
//  Description:
//    Allow users to login securely from the start
//
//

function getState()
{
   //
   //return the value of the checked item
   //called by checkSubmit
   //
   var state;
   if (document.Login.bSecurity[0].checked)
   {
      state = document.Login.bSecurity[0].value;
   }
   else
   {
      state = document.Login.bSecurity[1].value;
   }
   return state;
}

function checkSubmit()
{
      //
      //  checks if secure toggle button is pressed or not
      //  if it is don't allow the submition of the current
      //  form but submit the secureLogin form
      //
       if (getState() == "on")
       {
          document.secureLogin.user.value = document.Login.user.value;
          document.secureLogin.pass.value = document.Login.pass.value;
          document.secureLogin.submit();
          return false;
       }
       else
       {
          return true;
       }
       return false;
}

function writeForm()
{
      //
      //  creates a the secure form
      //
      var fullHostName = XDGetFullHostName();
      var cgiAction = "https://" + fullHostName + "/cgi-bin/login.cgi";
      var formStr;

      formStr = "<form name=\"secureLogin\" method=\"post\" action=\"";
      formStr += cgiAction;
      formStr += "\">";
```

```
        formStr += "<input type=\"hidden\" name=\"user\" value=\"\">";

        formStr += "<input type=\"hidden\" name=\"pass\" value=\"\">";
        formStr += "<input type=\"hidden\" name=\"bSecurity\"
value=\"on\">\n</form>";
        document.writeln(formStr);

}

function clickSecureState()
{
        var tempL = new String(document.location);
        var start = -1;
        start = tempL.indexOf("https");
        if (start != -1)
        {
           if (document.Login.bSecurity[0].value == "on")
           {
              document.Login.bSecurity[0].click();
           }
           else
           {
              document.Login.bSecurity[1].click();
           }
        }
}
```


SDOCID: <WO_____0133381A1_IA>

//skip.js

```
//*****************************************************************************
// xd_skip: Popup a skip the download window for the X:Drive skip
// the download service.
//
// Inputs:
//    file_url  : the absolute URL of the file to fetch
//    file_name : the name to call the stored file
//    file_size : the file size in KB
//
// Outputs:
//    none
//*****************************************************************************

var skipPartner;
var skipLanguage;
var height = 200;
var width = 575;

function xd_change_location (url)
{
    document.location=url;

}


function xd_skip(file_url,file_name,alt_url,catid,gid,sid,langauge,partner)
{

    var base_url = "http://www.xdrive.com/cgi-bin/skip_the_download.cgi";

    if (! file_name || file_name.length == 0)
      {
          var ii;
          for (ii=0; ii<= file_url.length; ii++)
            {
                if (file_url.charAt(ii) == '/')
                  {
                      file_name = '';
                  }
                else
                  {
                      file_name = file_name + file_url.charAt(ii);
                  }
            }
      }

    var params = "FILEURL="   + escape(file_url) +
      "&FILENAME=" + escape(file_name) +
      "&ALTURL=" + escape(alt_url);

    if (langauge) {
      skipLangauge = langauge;
    }

    if (partner) {
      skipPartner = partner;
    }

    if (skipPartner)
```

```
    {
        params = params + "&STDPARTNER=" + escape(skipPartner);
    }

    if (skipLanguage)
    {
        params = params + "&LANG=" + escape(skipLanguage);
    }

    if (catid)
    {
        params = params + "&CATID=" + escape(catid);
    }

    if (gid)
    {
        params = params + "&GID=" + escape(gid);
    }

    if (sid)
    {
        params = params + "&SID=" + escape(sid);
    }

    if(skipPartner == 'cnet')
    {
        height = 235;
        width = 600;
    }

    url = base_url + "?" + params;
    var d = new Date();
    var name = d.getTime();

    window.open
        (
        url,
        name,

'toolbar=no,menubar=no,scrollbars=no,fullscreen=no,resizable=no,width=' +
width + ',height=' + height
        );

    return;
}
```


SDOCID: <WO_____0133381A1_IA>

//skipthedownload.js

```
<SCRIPT LANGUAGE="JavaScript"
SRC="http://www.xdrive.com/js/skip.js"></SCRIPT>
<SCRIPT LANGUAGE="JavaScript" defer>

var win = external.menuArguments;

ExtMen = external.menuArguments;
ExtMenTag = ExtMen.event.srcElement;
ExtMenDoc = ExtMen.document;

var url;


function findAnchor(el) {

  while ((el!=null) && ((el.tagName!="A") && (el.href!="")))
    el = el.parentElement;
  return el;

}


function findUrl() {
   var re;
   var IMGinsideLink = false;

   //alert("Tag name is " + ExtMenTag.tagName);

   switch ( ExtMenTag.tagName ) {
   // if a "LINK", return the link's URL
   case "A" :
      url = ExtMenTag.href;
      break;

   case "TD":
      var el = win.document.selection.createRange();
      a = findAnchor(el.parentElement(0));
      if (a != null)
          {
          url = a.href;
          }
      break;

     // if it was an image, then this gets complicated:
    case "IMG" :

      // check all links to make sure we aren't in one:
       for ( count = 0; count < ExtMenDoc.links.length; count++ )
          if ( ExtMenDoc.links( count ).contains( ExtMenTag ) ) {
             IMGinsideLink = true;
             break;
             }


       // if none was found, return the image URL:
       if ( !IMGinsideLink )
          url = ExtMenTag.src;
       else {
```

```
            url = ExtMenDoc.links[ count ].href;
         }
         break;

      default:
         url = ExtMenDoc.href;
         break;
         }

      // Replace "."
      re = /%2e/g;
      url = url.replace(re, ".");

      // Replace ":"
      re = /%3A/g;
      url = url.replace(re, ".");


      // See if from hotfiles ZD-Net
      if (url.indexOf("hotfiles.zdnet") != -1)
         {
         var startIndex;
         var endIndex;

         startIndex = url.indexOf("refresh_url=");
         if (startIndex != -1)
            {
            startIndex += 12;
            endIndex = url.indexOf("&", startIndex);

            if (endIndex != -1)
               {
               url = url.substring(startIndex, endIndex);
               }
            }
         }
      // see if from "download.com" C-Net
      else if (url.indexOf("download.com") != -1)
         {
         var indexHttp;
         var indexFtp;

         indexHttp = url.lastIndexOf("http://");
         indexFtp = url.lastIndexOf("ftp://");
         index = indexHttp;
         if (indexFtp > indexHttp)
            index = indexFtp;

         //alert( "index is " + index );

         if (index > 0)
            {
            var tempUrl;

            tempUrl = url.substr(index);
            url = tempUrl;
            }
      }


}

findUrl();
```


SDOCID: <WO_____0133381A1_IA>

```
//alert("begin");
//alert(url);

// Call X:Drive to perform actual copy

xd_skip(url);

</script>
```

//submit.js

```
/*****************************************************************************
*
* Submit.JS: This javascript class is for all the actions associated with
* buttons.  This class may either open a new window or submit an existing
* form for server parsing.
*****************************************************************************
/



/*****************************************************************************
 * XDCheckFormInput() - check upload/rename/create input.
 *   if there are errors, give then alert. if not, submit
*****************************************************************************/
function XDCheckFormInput()
{
      //make sure user is not allowed to upload a blank file
      if (XD_gsAction == 'Upload')
      {
            sFormName = XD_goFrameFileExplorer.document.form_upload;
            if(sFormName.file_to_upload_01.value == '')
            {
                  alert(XD_gsAlertUploadEmptyFile);
                  return false;
            }
      }
      //make sure user cannot create a blank file
      else if (XD_gsAction == 'Create')
      {
            sFormName = XD_goFrameFileExplorer.document.form_create;
            if (sFormName.sFolderNew.value=='')
            {
                  alert(XD_gsAlertCreateEmptyFile);
                  return false;
            }
      }
      else if (XD_gsAction == 'Rename')
      {
            sFormName = XD_goFrameFileExplorer.document.form_rename;
            //do not allow user to rename file the same name it already has
            //find just the file name to compare to what was input

            var lastSlash=sFormName.sItemCurrent.value.lastIndexOf('/');

            //if this is a folder of user may edit file extensions, use this
code
            if ((parent.parent.XDProfileEditExtensions) ||
(XD_gnSelectedFileCount==0))
            {
                  //allow user to edit extensions so check everything after
the
                  //last slash
                  var
fileName=sFormName.sItemCurrent.value.substring(lastSlash+1,sFormName.sItemCu
rrent.value.length);

                  if (fileName == sFormName.sItemNew.value)
```


ISDOCID: <WO_____0133381A1_IA>

```
                {
                        alert(XD_gsAlertRenameSameName);
                        return false;
                }
        }
        else
        {
                //do not allow user to edit extensions so need to find last
'.' as well
                var lastDot=sFormName.sItemCurrent.value.lastIndexOf('.');
                var
fileName=sFormName.sItemCurrent.value.substring(lastSlash+1,lastDot);

                if (fileName == sFormName.sItemNew.value)
                {
                        alert(XD_gsAlertRenameSameName);
                        return false;
                }
        }

        //check to see if user is trying to name the file/folder nothing
        //give em an error message if so
        if (sFormName.sItemNew.value == '')
        {
                alert(XD_gsAlertRenameNothing);
                return false;
        }
    }
    else { }

    XD_gsAction = '';
    //sFormName.submit();
    return true;
}

function XDSubmitView (sFormName) {
    // Always start by checking the status and if the status is not active
then
    // return and do not perform any actions.
    //if (! XDfunctionStatus(parent.parent.XD_TOOLBAR_BUTTON_VIEW))

    if (! XDfunctionStatus(XD_TOOLBAR_BUTTON_VIEW)) {
        return false;
    }

    var sFixed = '';
    var sFileName = XDSelected();

    for (i = 0;i <= sFileName.length;i++) {
        if (sFileName.charAt(i) == ' ') {
            sFixed += '+';
      }
      else {
          sFixed += sFileName.charAt(i);
      }
    }

    // URL encode/escape string
    sFixed = escape(sFixed);

    var sURL = '/cgi-bin/file_load.cgi/'+sFixed+'?sFileCurrent=' + sFixed +
"&source=www.fileExplorer.view";
```

```
      XDReaderShow(sURL,400,400);
      return true;
   }

   // Justin's upload status stuff.
   function openUpload(form_check, url, name, f) {

      if (! form_check) {
         return false;
      }

      var form_length = f.length;
      var cnt = 0;

      for(var i = 0; i < f.length; i++) {
         var e = f.elements[i];

         if ( (e.type == "file") && (e.value.length > 0) )  {
            cnt++;
         }
      }

      var amp_nof = "&nof=";
      url += amp_nof + cnt;

      msgWindow =
window.open(url,name,'width=350,height=190,toolbar=no,resize=no,scrollbars=no
');

      return true;
   }

   function createRandomID () {
      substr_rand_num = new String(Math.random());

      return substr_rand_num.substring(2,14);
   }

   function XDSubmitDownload ()
   {
         // Always start by checking the status and if the status is not
         // active then return and do not perform any actions.
         //if (! XDfunctionStatus(parent.parent.XD_TOOLBAR_BUTTON_DOWNLOAD))
         if (! XDfunctionStatus(XD_TOOLBAR_BUTTON_DOWNLOAD))
         {
               return false;
         }

         var sFileName = XDSelected();
         var oDocument = XD_goFrameData.document;
         var sExtraPath;

         sExtraPath = '/'+sFileName;

         HTMLGenericStart(oDocument);
         oDocument.write('<form name="form_download" target="userData"
method="POST" action="/cgi-bin/file_load.cgi' + sExtraPath + '"
enctype="multipart/form-data">'+"\n");
         oDocument.write('<input type="hidden" name="sFileCurrent"
value="'+sFileName+'">');
         oDocument.write('<input type="hidden" name="mime" value="download">');
         oDocument.write('<input type="hidden" name="source"
value="www.fileExplorer.download">');
```


ISDOCID: <WO_____0133381A1_IA>

```
        oDocument.write('<input type="hidden" name="sFolderCurrent" value="' +
XDSelectedFolder() + '">');
          //johngaa test add 12/2/99
          oDocument.write('</form>');
          //end of johngaa add
        HTMLGenericEnd(oDocument);
        oDocument.forms[0].submit();
        return true;
}

function XDSubmitNewFolder(sFormName)
{
        var sNewFolderName = prompt(XD_gsRenamePrompt);
        XDFormSetGeneric(sFormName);
        XDFormSetFolderNew(sFormName,sNewFolderName);
        sFormName.submit();
}

/*****************************************************************************
 * XDItemDelete: Delete an item (no prompting here)

*****************************************************************************/

function XDItemDelete()
{
        var sFileName = XDSelectedList();
        XDFormSetGeneric(sFormName);
        XDFormSetThingName(sFormName);
        sFormName.submit();
}

/*****************************************************************************
 * XDSubmitDelete: Verify they can delete the selected item and then
 *    redirect to a web page that will prompt them to delete.

*****************************************************************************/

function XDSubmitDelete(sFormName)
{
        if (! XDAllowChange(XDSelected()))
        {
                alert(XD_gsAlertDeleteFolder);
                return false;
        }
        location = "delete_prompt.html";
        return true;
}

function XDBufferChange(sFormName,sType)
{
        // We popup a new window for them to select a folder from
        XDFormSetBufferAction(sFormName,sType);
        parent.parent.XDopenFolderSelectWindow();
        XDFormSetSelectedFiles(sFormName);
}

function XDSubmitBufferChange (sFolderTo)
{
        // This method is being access across frames so we cannot easily pass
the form name
        // so instead we set a variable equal to what the object would have
been.
        sFormName = window.frames[XD_gsControlFrame].document.form_buffer;
```

```
        XDFormSetGeneric(sFormName);
        XDFormSetFolderNew(sFormName,sFolderTo);
        sFormName.submit();
}

function XDSubmitMove(sFormName)
{
        XDFrameMove();
        BuildExplorer(grove,XD_gsRootDirectory);
}

/*****************************************************************************
 * XDPopupShow: Show a popup browser

*****************************************************************************/

function XDReaderShow(sURL, nHeight, nWidth) {

        nWidth = 500;
        nHeight = 600;

        var r = window.open(sURL,"reader","location=no,toolbar=no,menubar=no,"+
"status=no,resizable=yes,scrolling=yes,scrollbars=yes,"+
                        "width="+nWidth+",height="+nHeight);

        //*** make sure the opener knows who the parent is
        if (r.opener == null) r.opener = self;

        //*** focus on the newly created window
        //r.focus();
}

function FrameObject()
{
        return XD_goFrameFileExplorer.document;
}

function HTMLGenericStart (oDocument)
{
        oDocument.open("text/html");
        oDocument.write('<html>');
        oDocument.write("<head>\n");
        oDocument.write("<link rel=stylesheet href='/css/style_back.css'
type='text/css'>\n");
        oDocument.write("</head>\n");
        oDocument.write('<body background="' + XDBackgroundImage() + '"
bgcolor="' + XDBackgroundColor() + '">'+"\n");
        oDocument.write('<table><tr>');
}

/*****************************************************************************
 * HTMLGenericEnd:

*****************************************************************************/

function HTMLGenericEnd (oDocument)
{
        oDocument.write('</table>');
        oDocument.write('</body>'+"\n");
        oDocument.write('</html>'+"\n");
        oDocument.close();
}
```


SDOCID: <WO_____0133381A1_IA>

```
function XDBuildForm()
{
      var form = '';
      var sSubmitButton = '/images/submit.gif';

      if (XDAction('Move'))
      {
            form += '<form name="form_buffer" action="/cgi-
bin/buffer_paste.cgi"' +
                  ' method="POST" target="centerview"'+
                  ' parent.parent.parent.XDReset();">'+"\n";
                  form += '<input type="hidden" name="sFile"
value="'+XD_gsMoveSelectedList+'">';
            sSubmitButton = '/images/move.gif';
            XD_gnFrameHeight = '40';
      }

      form += '<input type="hidden" name="sFolderCurrent" value="' +
XDSelectedFolder() + '">';
      form += '<input type="hidden" name="type" value="move">';
      form += '<input type="hidden" name="sItemCurrent" value="">';
      form += '<input type="hidden" name="sFolderNew" value="">';

      form += '<p><INPUT TYPE="button" VALUE="' + XD_gsButtonSubmit + '"
onClick="parent.parent.parent.XDSetMoveForm(document.forms[0]);">'+
            '<INPUT TYPE="button"  VALUE="' + XD_gsButtonCancel + '"
onClick="parent.parent.parent.XDReset();
parent.parent.parent.XDRefreshExplorer();">'+
            '</td>';
      form += '</form>';

      return form;
}

function XDSetMoveForm (oForm)
{
      oForm.sItemCurrent.value = XDSelectedToMove();
      oForm.sFolderNew.value = XDSelectedFolder();

        // adding check for target folder
        if (XD_gsSelectedFolderList.length > 0)
        {
         //check to see if the user is attempting to move the file into
         //the folder it is already in - can't do that
         var slash=oForm.sItemCurrent.value.lastIndexOf("/");
         var fileDirectory=oForm.sItemCurrent.value.substring(0,slash);

         if (oForm.sFolderNew.value == fileDirectory)
         {
            alert(XD_gsAlertMoveSameFolder);
         }
         else
         {
                // makes sure that the target is not the same as
                // source
                if (oForm.sFolderNew.value == oForm.sItemCurrent.value)
                {
                   alert(XD_gsAlertNoTargetFolder);
                }
                else
                {
```

```
                //call reset and submit form only if they can actually move
the file
                //else they only get the dialog warning box
                XDReset();
                oForm.submit();
                 }
          }
         }
         else
         {
            alert(XD_gsAlertNoTargetFolder);
         }
}

function XDFormSubmitButtons (generic)
{
      var HTMLString = '';
      var FormString = '';
      var TotalString = '';

      // Grab the appropriate HTML
      if (XDAction('Move'))
      {

            if (XD_gbExtraHelp)
            {
                  HTMLString = XDHelp(XD_gsHelpMoveHTML);
            }

            FormString = XDBuildForm();
            return HTMLString + "</TD></TR><TR><TD>" + FormString;
      }
     else if (XDAction('Rename'))
            {
            if (XD_gbExtraHelp)
                  {
                  HTMLString = XDHelp(XD_gsHelpFolderRename);
                  }
            }
     else if (XD_gbExtraHelp)
     {
           if (XD_gnSelectedCount > 0 && ! XDRootSelected())
           {
                 if (XD_gnSelectedFileCount)
                 {
                       HTMLString = XD_gsHelpFileSelected;
                 }
                 else
                 {
                       HTMLString = XD_gsHelpFolderSelected;
                 }
           }
           else
           {
                 if (XD_gsFirstTime)
                 {
                       HTMLString = XD_gsHelpFirstTimeEnter;
                 }
                 else
                 {
                       HTMLString = XD_gsHelpEnter;
                 }
          }
```


ISDOCID: <WO_____0133381A1_IA>

```
            // Format the help box
            HTMLString = XDHelp(HTMLString);
      }

      if (! generic)
      {
            var sSubmitButton;
            sSubmitButton = '/images/submit.gif';
            if (XDAction('Rename'))
            {
                  sSubmitButton = XD_gsButtonRename;
            }
            else if (XDAction('Upload'))
            {
                  sSubmitButton = XD_gsButtonUpload;
            }
            else if (XDAction('Create'))
            {
                  sSubmitButton = XD_gsButtonCreate;
            }
            else if (XDAction('Delete'))
            {
                  sSubmitButton = XD_gsButtonDelete;
            }

            return '<p><input type="submit" value="'+sSubmitButton+'">\n'+
                  '<input type=button value="' + XD_gsButtonCancel + '"
onclick="'+
                  'parent.parent.parent.XDReset(); '+
                  'parent.parent.parent.XDRefreshExplorer();">\n</FORM>';

      }

      TotalString = HTMLString + FormString;
      return TotalString;
}

function XDHelp (sHelp)
{
      return '<tr><td height=50 bgcolor="' + XD_gsExplorerHelpBackgroundColor
+ '" colspan=3 valign=top><FONT FACE="arial, helvetica" size="-1"
color="#666666"><b>' + XD_gsInstructions + '</b>\n' + sHelp + '\n</td></tr>';
}


/*****************************************************************************
 * XDFrameShare: Share a file with another user

*****************************************************************************/

function XDFrameShare()
{

      //if (! XDfunctionStatus(parent.parent.XD_TOOLBAR_BUTTON_SHARE))
      if (! XDfunctionStatus(XD_TOOLBAR_BUTTON_SHARE))
            {
            return false;
            }

      var sFile = XDEscapeCharacters(XDSelected());
```

```
        frames['centerview'].document.location  = '/cgi-
bin/share_a_file.cgi?help=' +
              XD_gbExtraHelp + '&sFileName=' + sFile;
        return true;
}

function XDCheck (sName)
{
        return "if (! XDAllowChange("+sName+") {return false;)";
}

function XDSelectedThingName()
{
        var r = '';
        var s = XDSelected();
        for (var i=0; i<s.length;++i)
        {
              var ch=s.charAt(i);
              if (ch == '/')
              {
                    r = '';
              }
              else
              {
                    r += ch;
              }
        }
        return r;
}

function XDSelectedThingNameMinusExtension()
{
        var r = '';
        var b = false; // found first time
        var s = XDSelectedThingName();
        for (var i=s.length;i>=0;--i)
        {
              var ch=s.charAt(i);
              if (ch == '.' && ! b)
              {
                    b = true;
                    r = '';
              }
              else
              {
                    r = ch + r;
              }
        }
        return r;
}

function XDSelectedThingNameExtension()
{
        var r = '';
        var s = XDSelectedThingName();
        var bFoundDot = false;
        for (var i=0;i<s.length;++i)
        {
              var ch = s.charAt(i);
              if (ch == '.')
              {
                    r = '';
                    bFoundDot = true;
```


SDOCID: <WO_____0133381A1_IA>

```
            }
            else
            {
                  r += ch;
            }
      }
      if (bFoundDot == true)
      {
            return '.'+r;
      }
      else
      {
            return '';
      }
}

/**************************************************************************
 * XDFrameUpload: Refresh the action frame with a form to perform the file
 * upload and set the form values during the HTML creation itself.

**************************************************************************/

function XDFrameUpload(sCurrentFolder)
{
      //if (! XDfunctionStatus(parent.parent.XD_TOOLBAR_BUTTON_UPLOAD))
      if (! XDfunctionStatus(XD_TOOLBAR_BUTTON_UPLOAD))
      {
            return false;
        }

      XDActionStart('Upload');
      XD_gnFrameHeight = '1';
      frames['centerview'].document.location = XDCenterView();
      return true;
}

function XDFrameFolderNew ()
{
      //if (!XDfunctionStatus(parent.parent.XD_TOOLBAR_BUTTON_NEWFOLDER))
      if (!XDfunctionStatus(XD_TOOLBAR_BUTTON_NEWFOLDER))
      {
            return false;
      }

      XDActionStart('Create');
      XD_gnFrameHeight = '1';
      frames['centerview'].document.location = XDCenterView();
      return true;
}

function XDFrameRename ()
{
      if (! XDAllowChange(XDSelected()))
      {
            alert(XD_gsAlertRenameFolder);
            return false;
      }
      //if (! XDfunctionStatus(parent.parent.XD_TOOLBAR_BUTTON_RENAME))
      if (! XDfunctionStatus(XD_TOOLBAR_BUTTON_RENAME))
      {
            return false;
      }
```

```
        XDActionStart('Rename');
        XD_gnFrameHeight = '1';
        frames['centerview'].document.location = XDCenterView();
        return true;
    }

    function XDFrameDeletePrompt()
    {
        if (! XDAllowChange(XDSelected()))
        {
            alert(XD_gsAlertDeleteFolder);
            return false;
        }

        //if (! XDfunctionStatus(parent.parent.XD_TOOLBAR_BUTTON_DELETE))
        if (! XDfunctionStatus(XD_TOOLBAR_BUTTON_DELETE))
        {
            return false;
        }

        XDActionStart('Delete');
        XD_gnFrameHeight = '1';
        frames['centerview'].document.location = XDCenterView();
        return true;
    }

    /*****************************************************************************
     * XDsetSelectedToMove: takes all files that are currently selected and sets
     *   their move attribute

    *****************************************************************************/

    function XDsetSelectedToMove(tag)
    {
        if (tag.attributes.selected)
        {
            tag.attributes.selected = 0;
            tag.attributes.move = 1;
        }

        for (var i = 0; i < tag.contents.length; i++)
        {
            if (tag.contents[i].type == "element")
            {
                XDsetSelectedToMove(tag.contents[i]);
            }
        }
    }

    function XDFrameMove()
    {
        if (! XDAllowChange(XDSelected()))
        {
            alert(XD_gsAlertMoveFolder);
            return false;
        }

        // XXX
        XD_gsMoveSelectedList = XD_gsSelectedList;
        XD_gsSelectedList = "";
        XDsetSelectedToMove(grove);

        XDActionStart('Move');
```


SDOCID: <WO_____0133381A1_IA>

```
    XD_gnFrameHeight = '1';
    frames['centerview'].document.location = XDCenterView();

    return true;
}


/*********************************************************************
 * XDBrowserDownloadSupported: Returns true if the browser supports the
 *   download button.  This includes all Netscape versions and IE 5 or later.
*********************************************************************/

function XDBrowserDownloadSupported()
{
    return !((navigator.appName == "Microsoft Internet Explorer") &&
                (parseInt(navigator.appVersion) <= 4 ));
}

function XDProfile(form)
{
    XDProfileEditExtensions = form.elements['bFileExtEdit'].checked;
    XD_gbExtraHelp = form.elements['bExtraHelp'].checked;
    XD_gbMarketing = form.elements['bMarketing'].checked;
    XD_gbNewsletter = form.elements['bNewsletter'].checked;
}

function XDLogout()
    {
    var sUrl = '/cgi-bin/logout.cgi';
    parent.parent.location.href = sUrl;
    }

/*********************************************************************
*
* XDSelected: Return the currently selected file or folder and remove the
* plus that appears at then end -- used the separate elements in a multi
* file/folder list.
*********************************************************************
/

function XDSelected()
    {
    return XD_gsSelectedList.substring(0,XD_gsSelectedList.length-1);
    }

function XDSelectedFolder()
    {
        alert(XD_gsLengthofFolder + XD_gsSelectedFolderList.length);
    return
XD_gsSelectedFolderList.substring(0,XD_gsSelectedFolderList.length-1);
    }

function XDSelectedToMove()
        {
        return
XD_gsMoveSelectedList.substring(0,XD_gsMoveSelectedList.length-1);
        }

/*********************************************************************
* XDCleanupPath: Cleanup the passed path by removing the "/X:drive/" prefix
* and the + postfix.
*********************************************************************/
```

```
function XDPathCleanup(sPath)
    {
    var sCopy = sPath;
    sCopy = sCopy.substring(9,sCopy.length)
    //sCopy = sCopy.substring(0,sCopy.length-1);
    return sCopy;
    }

function XDDomain ()
        {
        baseAddress = java.net.InetAddress.getLocalHost();
        userDomain = baseAddress.getHostName();
        alert(userDomain.toString());
        }

function XDXdrive ()
        {
        XDDomain();
        return '/cgi-bin/explorer_user_data.cgi';
        }

function XDCenterView ()
        {
        return '/cgi-
bin/frame_generic.cgi?thtml=centerview.thtml&sFrameHeight=' +
XD_gnFrameHeight;
        }

function XDReset ()
        {
        XD_gnSelectedCount = 0;
        XD_gnSelectedFileCount = 0;
        XD_gnSelectedFolderCount = 0;
        XD_gsSelectedList = "";
        XD_gnSelectedFolderID = '';
        XD_gsMoveSelectedList = "";
        XD_gsSelectedFolderList = "";
        XD_gsTargetFolder = "";
        ControlsEnabled = true;
        XDresetAllMovedSelected();
        XDActionEnd();
        }

function XDAllowChange (sFolder)
        {
        if (sFolder == '' || sFolder == '' || sFolder == 'public' || sFolder
== 'private')
                {
                return false;
                }
        return true;
        }

function XDAction (sAction)
        {
        if (XD_gsAction == sAction)
                {
                return true;
                }
        return false;
        }
```


ISDOCID: <WO_____0133381A1_IA>

```
// Register a new action
function XDActionStart (sAction)
        {
        XD_gsAction = sAction;
        }

// Clear the current action
function XDActionEnd ()
        {
        XD_gsAction = '';
        }

function XDRefreshExplorer()
    {
            //reset the action before calling this function
            //or the action screen will be drawn
            XDActionEnd();
            XD_gnFrameHeight = '40';
            //also reset if a move has been started but never finished
            XDresetAllMovedSelected();
            frames['centerview'].document.location=XDCenterView();
    }

function XDGetButtonFrameHeight(oDocument)
{
        oDocument.open("text/html");
        oDocument.write(XD_goButtonFrameHeight);
        oDocument.close;
}

function XDSetButtonFrameHeight(height)
{
        XD_gnButtonFrameHeight=height;
}

/*****************************************************************************
** XDRefreshBanner: Refresh the banner with a new advertisment.
*****************************************************************************/

function XDRefreshBanner()
        {
        if (XDBannerOn())
                {
                frames['banner'].document.location = '/cgi-bin/ads.cgi';
                // WIP: parent 3 twice removed (from the above line)
                }
        }

/*****************************************************************************
** XDBannerOn: Return true if we should display the banner.
*****************************************************************************/

function XDBannerOn()
        {
        if (XD_gsPartner == 'xdrv')
                {
                return true;
                }
        else
                {
                return false;
                }
        }
```

```
function XDTellAFriend()
    {
        var sUrl = '/cgi-
bin/tell_a_friend.cgi?numFriends='+XD_gnNumFriendsToTell;
        frames['centerview'].document.location=sUrl;
    }

function XDAddSpace()
    {
        var sUrl = '/cgi-bin/addspace.cgi?action=intro';
        frames['centerview'].document.location=sUrl;
    }

function XDDownloadClient()
{
        var sUrl = '/cgi-bin/download_client.cgi';
        frames['centerview'].document.location=sUrl;
}
```


ISDOCID: <WO_____0133381A1_IA>

//uploadStatus.js

```
<!--

function openUpload(form_check, url, name, f) {

   if (! form_check) {
      return false;
   }

   var form_length = f.length;
   var cnt = 0;

   for(var i = 0; i < f.length; i++) {
      var e = f.elements[i];

      if ( (e.type == "file") && (e.value.length > 0) )  {
         cnt++;
      }
   }

   var amp_nof = "&nof=";
   url += amp_nof + cnt;

   msgWindow =
window.open(url,name,'width=350,height=190,toolbar=no,resize=no,scrollbars=no
');

   return true;
}

function createRandomID () {
   substr_rand_num = new String(Math.random());

   return substr_rand_num.substring(2,14);
}

//-->
```

//utils.js

```
/*****************************************************************************
* XDFormSetThingName: Set the name for the thing in the passed form.
*****************************************************************************/

function XDFormSetThingName(sFormName)
      {
      sFormName.sThingName.value = XDSelectedList();
      }

function XDFormSetBufferAction(sFormName,sType)
      {
      sFormName.type.value = sType;
      }

function XDFormSetFolderCurrent(sFormName)
      {
      sFormName.sFolderCurrent.value = XDSelectedFolder();
      }

function XDFormSetSelectedFiles (sFormName)
      {
      sFormName.sFile.value = XDSelectedList();
      }

function XDFormSetFolderNew(sFormName,sFolderNameNew)
      {
      sFormName.sFolderNew.value = sFolderNameNew;
      }

/*****************************************************************************
* XDFormSetThingOld: Set the old name attribute for the rename CGI.
*****************************************************************************/

function XDFormSetThingOld(sFormName,sThingName)
      {
      sFormName.sThingNameOld.value = sThingName;
      }

/*****************************************************************************
* XDFormSetThingNew: Set the new name attribute for the rename CGI.
*****************************************************************************/

function XDFormSetThingNew(sFormName,sThingName)
      {
      sFormName.sThingNameNew.value = sThingName;
      }

function XDFormSetGeneric(sFormName)
      {
      XDFormSetFolderCurrent(sFormName);
      }

/*****************************************************************************
* XDPopupShow: Show a popup browser
*****************************************************************************/

function XDPopupShow(
      sURL, //*** (I) The URL to open in the popup window
      nHeight, //*** (I) The height of the popup
```


3NSDOCID: <WO_____0133381A1_IA>

```
        nWidth) //*** (I) The width of the popup
        {
        var w = window.open(sURL,"viewer","location=no,toolbar=no,menubar=no,"+
              "status=no,resizable=yes,scrolling=yes,scrollbars=no,"+
              "width="+nWidth+",height="+nHeight);

        //*** make sure the opener knows who the parent is
        if (w.opener == null) w.opener = self;

        //*** focus on the newly created window
        w.focus();
        }

function XDSelectedList()
    {
    return XD_gsSelectedList;
    }

function XDBackgroundColor()
    {
    return XD_gsExplorerBackgroundColor;
    }

function XDBackgroundImage()
    {
    return XD_gsBackgroundImage;
    }

function XDSelectedFolder()
    {
    return
XD_gsSelectedFolderList.substring(0,XD_gsSelectedFolderList.length-1);
    }

/*****************************************************************************
* XDCleanupPath: Cleanup the passed path by removing the "/X:drive/" prefix
* and the + postfix.
*****************************************************************************/
function XDPathCleanup(sPath)
    {
    var sCopy = sPath;
    sCopy = sCopy.substring(9,sCopy.length)
            //sCopy = sCopy.substring(0,sCopy.length-1);
            return sCopy;
    }

function XDMultiSelect (sValue)
    {
    if (sValue != 'null' && sValue != "")
        {
        m_sMultiSelect = sValue;
        }
    else
        {
        return m_sMultiSelect;
        }
    }

function HTMLNavigation ()
    {
    var sHTML = HTMLStart()
                +'<table width="100%" border="0" cellspacing="0"
cellpadding="0">'
```

```
                    +'<tr align="left" valign="top" bgcolor="#5EB114">'
                    +'<td><img src="/images/main/logo_top.gif" width="153"
height="28"></td>'
                    +'</tr><tr>'
                    +'<td><img src="/images/main/logo_center.gif" width="171"
height="97" alt="X:drive"></td>'
                    +'</tr><tr>'
                    +'<td><img src="/images/main/race_logo_bottom.gif"
width="171" height="35"></td>'
                    +'</tr></table>'
                    +'<a target="toolbar" href="http://www.mit.edu">MIT</a>'
                    +'</BODY>\n</HTML>';
    return sHTML;
    }

function HTMLStart ()
    {
    return "<HTML>\n"
    +'<body bgcolor="#6961AB" topmargin="0" leftmargin="0" marginheight="0"
marginwidth="0" text="#FFFFFF" link="#FFFFFF" {onload}>'
    +"\n";
    }

function HTMLEnd ()
    {
    return "\n</BODY>\n</HTML>\n";
    }

function RedrawToolBar()
    {
    var sWindow = 'window.toolbar';
    sWindow.document.write(HTMLStart()+'test'+HTMLEnd());
    }

function XDEscapeCharacters (str)
{
    var A = new Array();

    A = str.split("+");
    str = A.join("%2B");

   A = str.split(" ");
    str = A.join("+");

    A = str.split("%");
    str = A.join("%25");

    A = str.split("&");
    str = A.join("%26");

     return str;
}
```


3NSDOCID: <WO_____0133381A1_IA>

//verify_lib.js

```
<!-- Begin Hiding from older browsers

/*********************************************
***     Javascript library of functions commonly
***     used in HTML forms.
*********************************************

 validateForm(form)
      attaches to the submit button and takes the
      form as an argument. Validates all the
      fields and will only let the form be submitted
      if all the fields validate.

 checkForm()
      attaches to nothing. Is used by the script
      internally to allow compel() to function w/o
      calling alert(), which would cause an infinite
      loop.

 requireElements(num)
      attaches to onLoad to initialize the array
      of required fields in the form.

 addRequiredElements()
      attaches to nothing. Is used internally to
      construct a array of the names of all the
      required fields in a form. For this to work
      the form needs a "requiredElements" hidden
      input tag. It should be of this format:

      <INPUT TYPE="hidden" NAME="requiredElements" VALUE=" name:email:">

      List the required field names in order that
      they appear in the form. End each name with
      a ':' and lead the whole value with a blank
      space. If this tag is not used, then
      validateRequiredElements will identify a
      missing required field by its number in liue
      of the name.

 compel(textfield)
      attaches to an onBlur event on a textfield.
      This causes focus to be kept on a textfield
      until checkForm() determines that they user
      has filled it out correctly.

 required(textfield, num)
      attached to an onBlur of a field is required.
      The number is it's location on the
      required_elements array. i.e.

      <INPUT TYPE="text" NAME="name" onBlur="required(this, 0)">

      This tag declairs "name" as the first
      required field in the form.

 validatePhone(textfield)
      attaches to an onChage of a textfield. This
      function validates to true only if the
```


BNSDOCID: <WO .0133381A1_IA>

```
        textfield is blank or contains only
        0-9, -, (, or )

    validateEmail(textfield)
        attaches to an onChage of a textfield. This
        function validates to true only if the
        textfield is blank or contains an @

    validateDate(textfield)
        attaches to an onChage of a textfield. This
        function validates to true only if the
        textfield is blank or contains a date in
        the format DD-MON-RRRR

    validateDate_old(textfield)
        attaches to an onChage of a textfield. This
        function validates to true only if the
        textfield is blank or contains a date in
        the format DD/MM/YY

    validateNum(textfield)
        attaches to an onChage of a textfield. This
        function validates to true only if the
        textfield is blank or contains a number
        between -1 and infinity

    validateMoney(textfield)
        attaches to an onChage of a textfield. This
        function validates to true only if the
        textfield is blank or contains a number
        between with two decimal places (ie 2.56)

    confirmDelete(textfield)
        attaches to an onClick on a submit button
        used as a delete button that you want the
        user to confirm before engaging.

    reset_b()
        attaches to an onClick on a submit button.
        If you have a reset button, used confirmDelete
        or have a button that needs to override the
        validity of the form, this function should
        be attached to these buttons to allow them
        to function.

**************************************************/


    emailOK = true;
    phoneOK = true;
    dateOK = true;
    lengthOK = true;
    all_numOK = true;
    all_moneyOK = true;
    deleteOK = true;
    yearOK = true;
    required_elements = new Array();
    required_elements_names = new Array();
    blurred = "";
    in_required = false;
    submitted = false;
    var submitCount;
```


ISDOCID: <WO_____0133381A1_IA>

```
 function validateForm(form) {
   addRequiredElements(form);
   if (!emailOK) {
    alert(XD_gsValidateEmail);
    return false;
   } else if (!phoneOK) {
    alert(XD_gsValidatePhone);
    return false;
   } else if (!dateOK) {
    alert(XD_gsValidateDate);
      return false;
   } else if (!lengthOK) {
    alert(XD_gsValidateLength);
    return false;
   } else if (!all_numOK) {
    alert(XD_gsValidateNumber);
      return false;
   } else if (!all_moneyOK) {
    alert(XD_gsValidateMoney);
      return false;
   } else if (!yearOK) {
    alert(XD_gsValidateYear);
      return false;
   } else if (!deleteOK) {
    return false;
   } else if (!validateRequiredElements()) {
    return false;
   }
}

  function compel (textfield) {
    if (blurred == "") {
        blurred = textfield;
    }
    if (!checkForm()) {
        blurred.focus();
        blurred.select()
    }
    if (checkForm() && !in_required) {
        blurred = "";
    }
  }


  function checkForm() {
       if(!emailOK){
           return false;
       } else if(!phoneOK){
           return false;
         } else if(!dateOK){
           return false;
         } else if(!lengthOK){
           return false;
         } else if(!all_numOK){
           return false;
         } else if(!all_moneyOK){
           return false;
         } else if(!yearOK){
           return false;
         } else if(!deleteOK){
           return false;
       } else {
          return true;
```

```
        }
    }


    function requireElements(num) {
       var i;
       for (i=0; i < num; i++) {
           required_elements[i] = false;
       }
    }


    function addRequiredElements(form) {
       var found = false;
       for (var n=0; n < form.length; n++) {
             if (form.elements[n].name == "requiredElements") {
                   found = true;
             }
       }
       if (found) {
           var length = form.requiredElements.value.length;
           var start_index = 0;
           var end_index = 0;
           var num = 0;
           for (var i=0; i < length; i++) {
             var theChar = form.requiredElements.value.charAt(i);
             if (theChar == ":") {
                   start_index = end_index + 1;
                   end_index = i;
                   var string =
form.requiredElements.value.substring(start_index, end_index);
                   num = required_elements_names.length;
                   required_elements_names[num] = string;

             } // end of if ":"
           } //end for loop
        } // end of found
}


//check to see if the year is a 4-digit value greater than 1900
function validateYear(textfield)
{
      yearOK = true;

      //make sure the file contains only numbers
      for (var n=0; n < textfield.value.length; n++)
      {
            var theChar = textfield.value.charAt(n);
            if ((theChar >= "0") && (theChar <= "9"))
           {
                 //do nothing, assume it's still true
           }
           else
           {
                 //contains non numeric elements
                 yearOK=false;
           }

      }

      if (!yearOK)
      {
```


SDOCID: <WO_____0133381A1_IA>

```
            alert(XD_gsValidateContainNums);
      }

      if (textfield.value < 1900)
      {
            yearOK = false;
            alert(XD_gsValidateGreater1900);
      }

      if (textfield.value.length != 4)
      {
            yearOK = false;
            alert(XD_gsValidateFourDigits);
      }
}

// Checks for a properly formated email
function validateEmail(textfield)
{
      emailOK = true;

      if ((textfield.value == "") || (textfield.value.indexOf("@") < 0))
      {
            emailOK = false;
            alert(XD_gsValidateEmailFormat);
            return false;
      }
return true;
}


function required(textfield, num)
{
      var alert_show = false;
      in_required = true;
      if (blurred == "")
      {
         alert_show = true;
         blurred = textfield;
      }

      if(textfield.type == "select-one")
      {
            //if the first option is chosen, assume that is not a real
            //choice, simply a default
            if (textfield.selectedIndex == 0)
            {
                  if (alert_show)
                  {
                     alert(XD_gsValidateField + textfield.name +
XD_gsValidateRequired);
                  }
                  blurred.focus();
                  blurred.select();
                  required_elements[num] = false;
            }//end if selectedIndex empty
            else if (textfield.selectedIndex > 0)
            {
                  blurred = "";
                  required_elements[num] = true;
                  in_required = false;
            }//end else
```

```
      }//end select-one


      if (textfield.type == "text" || textfield.type == "textarea" ||
textfield.type == "password")
      {
            if(textfield.value.length==0)
            {
                  if (alert_show)
                  {
                     alert(XD_gsValidateField + blurred.name +
XD_gsValidateRequired);
                  }//end alert_show
                  blurred.focus();
                  blurred.select();
                  required_elements[num] = false;
            } //end if length empty
            else if (textfield.value.length > 0)
            {
              blurred = "";
              required_elements[num] = true;
              in_required = false;
            }//end else
      } //end if text
}


   function validateRequiredElements() {
      var length = required_elements.length;
      for (var i = 0; i < length; i++){
         if (!required_elements[i]){
            if (required_elements_names[i] == "") {
            alert(XD_gsValidateAllRequiredField + i +
XD_gsValidateNotFilled);
            return false;
           } else {
            alert(required_elements_names[i] + XD_gsValidateNotFilled);
            return false;
           }
           } // end of false element
       } // end of array
       return true;
   }


  function validatePhone(textfield) {
    phoneOK=true;
    var digits = 0;

    //Number can only contains ten digits and proper characters
    for(var i = 0; i < textfield.value.length; i++) {
      var theChar = textfield.value.charAt(i);
      if ((theChar >= "0") && (theChar <= "9")) {
        digits++;
        continue;
      }

      if (theChar == " ") continue;
      if (theChar == "-") continue;
      if (theChar == "(") continue;
      if (theChar == ")") continue;

      //else
```


ISDOCID: <WO_____0133381A1_IA>

```
      phoneOK = false;
    } //end for

    phoneOK = phoneOK && (digits == 10);
    if (textfield.value == "") {
     phoneOK = true;
    }
    if (!phoneOK)  {
       alert(XD_gsValidatePhoneFormat);
    }

    return phoneOK;
  }


  //Check that the date is in the form of DD-MON-YY
  function validateDate(textfield) {
    dateOK=true;
       if ((textfield.value.charAt(0) > "3") || (textfield.value.charAt(0) <
"0")) {
            dateOK=false;
      }
       if ((textfield.value.charAt(1) > "9") || (textfield.value.charAt(0) <
"0")) {
            dateOK=false;
      }
       if ((textfield.value.charAt(7) > "9") || (textfield.value.charAt(7) <
"0")) {
            dateOK=false;
      }
       if ((textfield.value.charAt(8) > "9") || (textfield.value.charAt(8) <
"0")) {
            dateOK=false;
      }
       if ((textfield.value.charAt(9) > "9") || (textfield.value.charAt(9) <
"0")) {
            dateOK=false;
      }
       if ((textfield.value.charAt(10) > "9") || (textfield.value.charAt(10)
< "0")) {
            dateOK=false;
      }
       if (textfield.value.charAt(2) != "-") {
            dateOK=false;
      }
       if (textfield.value.charAt(6) != "-") {
            dateOK=false;
      }
       var month = textfield.value.substring(3, 6);
      month = month.toUpperCase();
       if (!(month == "JAN" || month == "FEB" ||
          month == "MAR" || month == "APR" ||
          month == "MAY" || month == "JUN" ||
          month == "JUL" || month == "AUG" ||
          month == "SEP" || month == "OCT" ||
          month == "NOV" || month == "DEC")) {
           dateOK= false;
       }
      if (textfield.value == "") {
            dateOK = true;
      }
      if (!dateOK) {
            alert(XD_gsValidateDateFormat);
```

```
    }
}


//Check that the date is in the form of DD/MM/YY
function validateDate_old(textfield) {
  dateOK=true;
     if ((textfield.value.charAt(0) > "9") || (textfield.value.charAt(0) <
"0")) {
          dateOK=false;
     }
     if ((textfield.value.charAt(1) > "9") || (textfield.value.charAt(0) <
"0")) {
          dateOK=false;
     }
     if (textfield.value.charAt(2) != "/"){
          dateOK=false;
     }
     if ((textfield.value.charAt(3) > "3") || (textfield.value.charAt(3) <
"0")) {
          dateOK=false;
     }
     if ((textfield.value.charAt(4) > "9") || (textfield.value.charAt(4) <
"0")) {
          dateOK=false;
     }
     if (textfield.value.charAt(5) != "/"){
          dateOK=false;
   }
     if ((textfield.value.charAt(6) > "9") || (textfield.value.charAt(7) <
"0")) {
          dateOK=false;
     }
     if ((textfield.value.charAt(7) > "9") || (textfield.value.charAt(7) <
"0")) {
          dateOK=false;
     }
     if (textfield.value == "") {
          dateOK = true;
     }
     if (!dateOK) {
          alert(XD_gsValidateDateFormat);
     }
}


// checks to see that the textfield contains only numbers
function validateNum(textfield)
{
     all_numOK = true;

     for (var i=0; i < textfield.value.length; i++)
     {
          var theChar = textfield.value.charAt(i);
          if ((theChar < "0") || (theChar > "9"))
          {
               if (textfield.value != "-1")
               {
                    all_numOK = false;
                    alert(XD_gsValidateContainNums);
                    break;
               } // end of if not -
```


SDOCID: <WO_____0133381A1_IA>

```
            } //end if not #
        } //end for

        return all_numOK;
}

    // checks to see that the textfield contains two decimal places
    function validateMoney(textfield) {

        all_moneyOK = true;

        for (var i=0; i < textfield.value.length; i++) {
            var theChar = textfield.value.charAt(i);
            if ((theChar < "0") || (theChar > "9")) {
                if (theChar != ".") {
                    all_moneyOK = false;
                    alert(XD_gsValidateMoneyFormat);
                    break;
                }
            } //end if not #
        } //end for

        return all_moneyOK;
    }


function validateLength(textfield, len)
{
        lengthOK = true;

        if (textfield.value.length < len)
        {
                lengthOK = false;
                alert(textfield.name + XD_gsValidateLengthFormat + len +
XD_gsValidateChars);
        }
}

    // attache to delete buttons to confirm
    function confirmDelete(textfield) {
        deleteOK = confirm(textfield.value + ": Are you sure?");
    }

    // attache to other buttons, such as add, to allow them to submit
    // after a failed delete confirm
    function reset_b() {
        deleteOK = true;
            emailOK = true;
            phoneOK = true;
            dateOK = true;
            lengthOK = true;
            yearOK = true;
            all_numOK = true;
            deleteOK = true;
        var length = required_elements.length;
        for (var i=0; i < length; i++) {
                required_elements[i] = true;
        }
    }

    // a function to error check with
    function test() {
        alert("Testing!")
```

```
}

// checks to see that the textfield contains only numbers and is
//between 13 and 16 characters in length
function validateLengthandInput(textfield, minLength, maxLength, dateType)
{
      all_numOK = true;

      if ((textfield.value.length<minLength) ||
(textfield.value.length>maxLength))
      {
            all_numOK = false;

          if (minLength == maxLength)
          {
              if (dateType == "ExpDate") {
               alert(XD_gsValidateExpDateFormat);
              }
              else {
               alert(XD_gsValidateDateFormat + maxLength +
XD_gsValidateChars);
              }
          }
          else
          {
              alert(XD_gsValidateCard + minLength + XD_gsValidateAnd +
maxLength + XD_gsValidateChars);
          }

          return all_numOK;
      }

      for (var i=0; i < textfield.value.length; i++)
      {
          var theChar = textfield.value.charAt(i);
          if ((theChar < "0") || (theChar > "9"))
          {
              if (textfield.value != "-1")
              {
                  all_numOK = false;
                  alert(XD_gsValidateContainNums);
                  break;
              } // end of if not -
          } //end if not #
      } //end for

      return all_numOK;
}

function checkRequired(form)
{
      var complete = true;
      var length = form.elements.length;

      addRequiredElements(form);
      for (var i=0; i<length; i++)
      {
          for (var j=0; j < required_elements_names.length; j++)
          {
              if (form.elements[i].name == required_elements_names[j])
              {
```


NSDOCID: <WO_____0133381A1_IA>

```
                        if ((form.elements[i].type == "text") ||
                                (form.elements[i].type == "password") ||
                                (form.elements[i].type == "textarea")
                               )
                        {
                              if (form.elements[i].value == '')
                              {
                                    complete = false;
                                    break;
                              }
                        }
                        else if (form.elements[i].type == "select-one")
                        {
                              if (form.elements[i].selectedIndex == 0)
                              {
                                    complete = false;
                                    break;
                              }

                        }
                        else
                        {
                              //don't worry about radio button
                        }
                  }

            }
        }
        if (!complete)
        {
            //Temp bug fix: could not read any variable from english_text.js
(scope problem?)
            //was: alert(XD_gsValidateAllRequired)
                alert("A required field is not filled out.  Please make sure
all required fields are filled out before hitting submit.");
                return false;
        }
        else
        {

                /*
                Check if we've already submitted
                */

                if (!submitted)
                {
                   submitted = true;
                   submitCount = 0;
                //took this line out because it was breaking IE
                // and it's not used for submitting the form anyway
                   //form.submit();
                   return true;
                }

        }


        submitCount += 1;


        {
           var gender = "";
           var message = "";;
```

```
            if (form.gender.value == "1" || form.gender.value == "2")
            {
                var gender;
                if (form.gender.value == "1")
                {
                  gender = "Dude"
                }
                else
                {
                  gender = "Lady"
                }
            }

            if (submitCount == 2)
            {
                message = " Hey " + gender + " give me a second while I send
info";
            }
            if (submitCount == 3)
            {
                message = "Okay... now your just pressing too much";
            }
            if (submitCount > 1  && submitCount < 4)
            {

               alert(message);
            }

        }

        return false;
}

function CheckPassword(form)
{
        var length = form.elements.length;
      var change=1;
    //Make sure passwords match
    if (form.elements[1].value !=
        form.elements[2].value)
        {
                alert(XD_gsValidatePasswords);
                change=0;
            return false;
        }

        if (change==1)
        {
            form.submit();
        }
   return true;
}
```


SDOCID: <WO_____0133381A1_IA>

//xparse.js

```
function _element()

    {
    this.type = "element";
    this.name = new String();
    this.attributes = new Array();
    this.contents = new Array();
    this.uid = _Xparse_count++;
    _Xparse_index[this.uid]=this;

    // Added by Martin Hald
    this.attributes.folder = 0;
    }

function _chardata()
    {
    this.type = "chardata";
    this.value = new String();
    }

function _pi()
    {
    this.type = "pi";
    this.value = new String();
    }

function _comment()
    {
    this.type = "comment";
    this.value = new String();
    }

// an internal fragment that is passed between functions
function _frag()
    {
    this.str = new String();
    this.ary = new Array();
    this.end = new String();
    }

//////////////////////////
// global vars to track element UID's for the index
var _Xparse_count = 0;
var _Xparse_index = new Array();


//////////////////////////
//// Main public function that is called to
//// parse the XML string and return a root element object

function Xparse(src)
    {
    // Hack added by Martin Hald to fix the grove[x] not an object error
    // where the grove object array indexes was shifted up by the previos
    // parsing
    _Xparse_count = 0;

    var frag = new _frag();
```

```
    // remove bad \r characters and the prolog
    frag.str = _prolog(src);

    // create a root element to contain the document
    var root = new _element();
    root.name= XD_gsRootPath;
    root.attributes.folder = 1;
    root.attributes.show = 1;

    // main recursive function to process the xml
    frag = _compile(frag);

    // all done, lets return the root element + index + document
    root.contents = frag.ary;
    root.index = _Xparse_index;
    _Xparse_index = new Array();

    return root;
    }

//////////////////////////

//////////////////////////
//// transforms raw text input into a multilevel array
function _compile(frag)
    {
    // keep circling and eating the str
    while (1)
        {
        // when the str is empty, return the fragment
        if (frag.str.length == 0)
            {
            return frag;
            }

        var TagStart = frag.str.indexOf("<");

        if (TagStart != 0)
            {
            // theres a chunk of characters here, store it and go on
            var thisary = frag.ary.length;
            frag.ary[thisary] = new _chardata();
            if (TagStart == -1)
                {
                frag.ary[thisary].value = _entity(frag.str);
                frag.str = "";
                }
            else
                {
                frag.ary[thisary].value =
_entity(frag.str.substring(0,TagStart));
                frag.str = frag.str.substring(TagStart,frag.str.length);
                }
            }
        else
            {
            // determine what the next section is, and process it
            if (frag.str.substring(1,2) == "?")
                {
                frag = _tag_pi(frag);
                }
            else
```


ISDOCID: <WO_____0133381A1_IA>

```
                {
                if (frag.str.substring(1,4) == "!--")
                    {
                    frag = _tag_comment(frag);
                    }
                else
                    {
                    if (frag.str.substring(1,9) == "![CDATA[")
                        {
                        frag = _tag_cdata(frag);
                        }
                    else
                        {
                        if (frag.str.substring(1,frag.end.length + 3) == "/"
+ frag.end + ">" || _remove_escapes(frag.str.substring(1,frag.end.length +
3)) == "/" + frag.end)
                            {
                            // found the end of the current tag, end the
recursive process and return
                            frag.str = frag.str.substring(frag.end.length +
3,frag.str.length);
                            frag.end = "";
                            return frag;
                            }
                        else
                            {
                            frag = _tag_element(frag);
                            }
                        }
                    }
                }

            }
        }
    return "";
    }

//////////////////////


//////////////////////
//// functions to process different tags
function XDTrueSpaceIndex(frag)
    {
    var length = frag.length;
    for (var i=0; i < length; i++)
        {
        if (  (frag.charAt(i) == " ")
            &&(frag.charAt(i-1) != "\\")
           )
            {

            break;

            }
        }

    return i;
    }


function _tag_element(frag)
    {
```

```
        // initialize some temporary variables for manipulating the tag
        var close = frag.str.indexOf(">");
        var empty = (frag.str.substring(close - 1,close) == "/");
        if (empty)
            {
            close -= 1;
            }

        // split up the name and attributes
        var starttag = _normalize(frag.str.substring(1,close));
        //var nextspace = starttag.indexOf(" ");
        var nextspace = XDTrueSpaceIndex(starttag);
        var attribs = new String();
        var name = new String();
        if (nextspace != -1)
            {
            name = starttag.substring(0,nextspace);
            attribs = starttag.substring(nextspace + 1,starttag.length);
            }
        else
            {
            name = starttag;
            }

        var thisary = frag.ary.length;
        frag.ary[thisary] = new _element();
        frag.ary[thisary].name = _remove_escapes(name);

        if (attribs.length > 0)
            {
            frag.ary[thisary].attributes = _attribution(attribs);
            }

        if (!empty)
            {
            // !!!! important,
            // take the contents of the tag and parse them
            var contents = new _frag();
            contents.str = frag.str.substring(close + 1,frag.str.length);
            contents.end = name;
            contents = _compile(contents);
            frag.ary[thisary].contents = contents.ary;
            frag.str = contents.str;
            }
        else
            {
            frag.str = frag.str.substring(close + 2,frag.str.length);
            }
        return frag;
        }

    function _tag_pi(frag)
        {
        var close = frag.str.indexOf("?>");
        var val = frag.str.substring(2,close);
        var thisary = frag.ary.length;
        frag.ary[thisary] = new _pi();
        frag.ary[thisary].value = val;
        frag.str = frag.str.substring(close + 2,frag.str.length);
        return frag;
        }

    function _tag_comment(frag)
```


NSDOCID: <WO_____0133381A1 IA>

```
    {
    var close = frag.str.indexOf("-->");
    var val = frag.str.substring(4,close);
    var thisary = frag.ary.length;
    frag.ary[thisary] = new _comment();
    frag.ary[thisary].value = val;
    frag.str = frag.str.substring(close + 3,frag.str.length);
    return frag;
    }

function _tag_cdata(frag)
    {
    var close = frag.str.indexOf("]]>");
    var val = frag.str.substring(9,close);
    var thisary = frag.ary.length;
    frag.ary[thisary] = new _chardata();
    frag.ary[thisary].value = val;
    frag.str = frag.str.substring(close + 3,frag.str.length);
    return frag;
    }

//////////////////////////


//////////////////
//// util for element attribute parsing
//// returns an array of all of the keys = values
function _attribution(str)
    {
    var all = new Array();
    while (1)
        {
        var eq = str.indexOf("=");
        if (str.length == 0 || eq == -1)
            {
            return all;
            }

        var id1 = str.indexOf("\'");
        var id2 = str.indexOf("\"");
        var ids = new Number();
        var id = new String();
        if ((id1 < id2 && id1 != -1) || id2 == -1)
            {
            ids = id1;
            id = "\'";
            }
        if ((id2 < id1 || id1 == -1) && id2 != -1)
            {
            ids = id2;
            id = "\"";
            }
        var nextid = str.indexOf(id,ids + 1);
        var val = str.substring(ids + 1,nextid);

        var name = xstrip(str.substring(0,eq));
        var entity = new String();
        entity = _entity(val);
        all[name] = entity;
        str = str.substring(nextid + 1,str.length);
        }
    return all;
    }
```

```
//////////////////////


//////////////////////
//// util to remove \r characters from input string
//// and return xml string without a prolog
function _prolog(str)
    {
    var A = new Array();

    A = str.split("\r\n");
    str = A.join("\n");
    A = str.split("\r");
    str = A.join("\n");

    var start = str.indexOf("<");
    if (str.substring(start,start + 3) == "<?x" || str.substring(start,start
+ 3) == "<?X" )
        {
        var close = str.indexOf("?>");
        str = str.substring(close + 2,str.length);
        }
    var start = str.indexOf("<!DOCTYPE");
    if (start != -1)
        {
        var close = str.indexOf(">",start) + 1;
        var dp = str.indexOf("[",start);
        if (dp < close && dp != -1)
            {
            close = str.indexOf("]>",start) + 2;
            }
        str = str.substring(close,str.length);
        }
    return str;
    }
//////////////////


function _remove_escapes (str)
     {
     var A = new Array();
     A = str.split("\\");
     str = A.join("");
     return str;
     }

//////////////////////
//// util to remove white characters from input string
function xstrip(str)
    {
    A = str.split(" ");
    str = A.join("");
    A = str.split("\n");
    str = A.join("");
    A = str.split("\t");
    str = A.join("");

    //A = str.split(" ");
    //str = A.join(" ");
    //A = str.split("\n");
    //str = A.join("");
    //A = str.split(" ");
    //str = A.join("");
```


SDOCID: <WO_____0133381A1 IA>

```
    //A = str.split("\t");
    //str = A.join("");

    return str;
    }
//////////////////


//////////////////////
//// util to replace white characters in input string
function _normalize(str)
    {
    var A = new Array();

    A = str.split("\n");
    str = A.join(" ");
    A = str.split("\t");
    str = A.join(" ");

    return str;
    }
//////////////////


//////////////////////
//// util to replace internal entities in input string
function _entity(str)
    {
    var A = new Array();

    //A = str.split("&lt;");
    //str = A.join("<");
    //A = str.split("&gt;");
    //str = A.join(">");
    //A = str.split("&quot;");
    //str = A.join("\"");
    //A = str.split("&apos;");
    //str = A.join("\'");

    //A = str.split("&amp;");
    //str = A.join("&");

    //Get rid of any escapes
    A = str.split("\\");
    str = A.join("");

    return str;
    }
//////////////////
```

CLAIMS

What is claimed is:

1. A shared computer network storage system, comprising:

a first database containing file data;

a second database containing information (metadata) about said file data of said first database;

a server, said server executing file commands on said first file database, said server contemporaneously updating said second metadatabase upon executing said file commands; and

a client application, said client application communicating with said server, said client application invoking file commands upon said server, said server executing said file commands and updating information regarding said first file and second metadata databases displayed by said client application; whereby

said client application controls files in said first file database and information regarding status of said first database files is more readily available by reference to said second metadatabase.

2. The shared computer network storage system of claim 1, wherein said first file database is distributed over at least two physical storage devices.

3. The shared computer network storage system of claim 1, wherein said second metadatabase is distributed over at least two physical storage devices.

4. The shared computer network storage system of claim 1, wherein said client application communicates with said server via a proxy.

5. The shared computer network storage system of claim 1, wherein said server comprises a non-routable network.

6. The shared computer network storage system of claim 1, wherein said server comprises a transaction processor.

7. The shared computer network storage system of claim 6, wherein said transaction processor guarantees access to and transactions on said first and second databases.

8. The shared computer network storage system of claim 1, wherein said server comprises an enterprise java bean cluster (EJBC).

9. The shared computer network storage system of claim 8, wherein said enterprise java bean cluster (EJBC) handles business logic and resource access methods a well as memory caching for common resources.

10. The shared computer network storage system of claim 1, wherein said server further comprises an application network.

NSDOCID: <WO_____.0133381A1 IA>

11. The shared computer network storage system of claim 10, wherein said application network further comprises a java application cluster.

12. The shared computer network storage system of claim 10, wherein said application network handles display functions and resource requests.

13. The shared computer network storage system of claim 1, wherein said server further comprises a web server.

14. The shared computer network storage system of claim 13, wherein said web server handles all requests for static content and proxies requests for dynamic content.

15. The shared computer network storage system of claim 1, wherein said server further comprises a load balancer, said load balancer proxying requests to a sub-server having the highest degree of availability or functionality.

16. The shared computer network storage system of claim 1 wherein said server further comprises a DNS redirector, said DNS redirector proxying requests to a resource having a highest degree of functionality.

17. The shared computer network storage system of claim 1 wherein said server further comprises:

a transaction processor, said transaction processor on a non-routable network, said transaction processor guarantees access to and transactions on said first and second databases;

an enterprise java bean cluster (EJBC) on a non-routable network, said enterprise java bean cluster (EJBC) coupled to said transaction processor and handling business logic and resource access methods a well as memory caching for common resources;

an application network on a non-routable network, said application network coupled to said enterprise java bean cluster, said application network including a java application cluster and handling display functions and resource requests;

a web server, said web server coupled to said application network and handling all requests for static content and proxies requests for dynamic content;

a load balancer, said load balancer coupled to said web server and proxying requests to a sub-server having the highest degree of availability or functionality; and

a DNS redirector, said DNS redirector coupled to said load balancer and proxying requests to a resource having a highest degree of functionality.

18. The shared computer network storage system of claim 1, wherein said client application is web-based.

19. The shared computer network storage system of claim 1, wherein said client application interacts with an operating system running upon a computer upon which said client application is also running, said client application adopting and implementing a visual display format similar to said operating system.

20. A shared computer network storage system, comprising:

a first database containing file data, said first database distributed over at least two physical storage devices;

a second database containing information (metadata) about said file data of said first database, said second database distributed over at least two physical storage devices;

a server, said server executing file commands on said first file database, said server contemporaneously updating said second metadatabase upon executing said file commands, said server including:

a transaction processor, said transaction processor on a non-routable network, said transaction processor guarantees access to and transactions on said first and second databases;

an enterprise java bean cluster (EJBC) on a non-routable network, said enterprise java bean cluster (EJBC) coupled to said transaction processor and handling business logic and resource access methods a well as memory caching for common resources;

an application network on a non-routable network, said application network coupled to said enterprise java bean cluster, said application network including a java application cluster and handling display functions and resource requests;

a web server, said web server coupled to said application network and handling all requests for static content and proxies requests for dynamic content;

a load balancer, said load balancer coupled to said web server and proxying requests to a sub-server having the highest degree of availability or functionality; and

a DNS redirector, said DNS redirector coupled to said load balancer and proxying requests to a resource having a highest degree of functionality; and

a client application, said client application communicating with said server via a proxy, said client application invoking file commands upon said server, said server executing said file commands and updating information regarding said first file and second metadata databases displayed by said client application; whereby

said client application controls files in said first file database and information regarding status of said first database files is more readily available by reference to said second metadatabase.

21. The shared computer network storage system of claim 20, wherein said client application is web-based.

22. The shared computer network storage system of claim 20, wherein said client application interacts with an operating system running upon a computer upon which said client application is also running, said client application adopting and implementing a visual display format similar to said operating system.

23. A method for providing private file space and information transfer over a public computer network, the steps comprising:

providing a publicly-available private file space system coupled to the public computer network;

providing a client program in communication with the public computer network;

sending a request from said client program to said publicly-available private file space system

ISDOCID: <WO_____0133381A1 IA>

("private system");

evaluating said request;

authenticating said request;

satisfying said request; and

returning a success indicator to said client program indicating the success or failure of said request; whereby

said client program may create and control files held by said private system.

24. The method for providing private file space and information transfer over a public computer network as set forth in claim 23, wherein the step of evaluating said request further comprises evaluating said request for static content and returning an appropriate response if said request is for static content.

25. The method for providing private file space and information transfer over a public computer network as set forth in claim 24, the steps further comprising:

providing an application network within said private system;

proxying said request to said application network; and

parsing a header of said request.

26. The method for providing private file space and information transfer over a public computer network as set forth in claim 23, wherein said step of authenticating said request further comprises:

authenticating a user using said client program; and

authenticating said request made by said client program to ensure that it conforms with an account associated with said user.

27. The method for providing private file space and information transfer over a public computer network as set forth in claim 23, further comprising:

parsing multipart form data associated with said request;

determining said request's type; and

submitting said request.

28. A method for providing private file space and information transfer over a public computer network, the steps comprising:

providing a publicly-available private file space system coupled to the public computer network;

providing a client program in communication with the public computer network;

sending a request from said client program to said publicly-available private file space system ("private system");

evaluating said request for static content and returning an appropriate response if said request is for static content;

providing an application network within said private system;

proxying said request to said application network; and

parsing a header of said request

authenticating said request by authenticating a user using said client program and authenticating said request made by said client program to ensure that it conforms with an account associated with said user;

parsing multipart form data associated with said request;

determining said request's type;

submitting said request;

satisfying said request; and

returning a success indicator to said client program indicating the success or failure of said request; whereby

said client program may create and control files held by said private system.

29. A data structure for effecting file operations on a private file space and information transfer system over a public computer network, comprising:

a user data object;

a process request object; and

a recovery object;

said user information object, said process request object, and said recovery object associated within a file action object.

30. The data structure for effecting file operations on a private file space and information transfer system over a public computer network as set forth in claim 29, wherein said user data object further comprises:

a user information object; and

a security object.

31. The data structure for effecting file operations on a private file space and information transfer system over a public computer network as set forth in claim 29, wherein said process request object further comprises:

a file operation object comprising said recovery object and a database IO object, a file IO object, and an administration object.

32. The data structure for effecting file operations on a private file space and information transfer system over a public computer network as set forth in claim 29, wherein said recovery object further comprises:

a recovery IO object;

a mount status object;

a recovery administration object; and

a recovery process object.

33. A data structure for effecting file operations on a private file space and information transfer system over a public computer network, comprising:

a user data object, said user data object having a user information object; and a security object;

a process request object, said process request object including a file operation object, a database IO object, a file IO object, and an administration object; and

NSDOCID: <WO 01333381A1 IA>

a recovery object, said recovery object incorporated in said file operation object, said recovery object including a recovery IO object, a mount status object, a recovery administration object, and a recovery process object;

said user information object, said process request object, and said recovery object associated within a file action object; whereby

file operations may be facilitated by the data structure including recovery from resource failure.

34. A shared file storage resource for a computer network, comprising:

an allocatable file storage resource;

a server, said server coupled to said storage resource, said server:

allocating individual user file space for a plurality of users on said storage resource;

receiving files for storage on said storage resource;

transmitting files stored on said storage resource;

generating control-protocol codes for transmitting said files;

receiving file commands for controlling files on said storage resource; and

transmitting display codes indicating file status on said storage resource, said display codes representing said storage resource as a network drive;

a first network connection, said first network connection coupling said server to the computer network;

a workstation, said workstation:

receiving files for storage on said storage resource;

transmitting files stored on said storage resource;

receiving file commands for controlling files on said storage resource; and

transmitting display codes indicating file status on said storage resource, said display codes representing said storage resource as a network drive; whereby

a user may store, retrieve, and control files in a unique and secure file storage area on said allocatable storage resource available throughout the computer network and detached from said workstation.

35. The shared file storage resource for a computer network as set forth in claim 34, wherein said display codes further comprise:

a browser-interpretable object, such as a JavaScript object, said object displaying file status on said storage resource as a web page.

36. The shared file storage resource for a computer network as set forth in claim 34, further comprising:

a standalone program running on said workstation, said standalone program interpreting said display codes and providing a seamless interface to said user, said seamless interface presenting said storage resource as a local or network resource to said user and allowing said user to manipulate files on said storage resource in the same manner as local storage resources such as a floppy disk drive or a local hard drive.

37. The shared file storage resource for a computer network as set forth in claim 34, wherein said computer network, further comprises:

the Internet.

38. A method for transferring data from a first network resource to a second network resource at the direction of a user, the steps comprising:

submitting a first file location indicating data to be transferred to the second network resource;

the second network resource requesting said data at said first file location from the first network resource;

the first network resource transmitting said data to the second network resource; and

the second network resource notifying the user of successful transfer upon successful reception of said data; whereby

the user may use the first and second network resources to obtain and control said data.

39. The method for transferring data as set forth in claim 38, wherein the second network resource comprises a subscriber-based system of network-available storage space.

40. The method for transferring data as set forth in claim 38, wherein the first and second network resources are coupled to the Internet.

41. The method for transferring data as set forth in claim 38, the steps further comprising:

displaying to the user a status of transmission of said data from said first network resource to said second network resource.

42. The method for transferring data as set forth in claim 38, the steps further comprising:

verifying the user as a subscriber to or member of the second network resource.

43. A method for transferring data from a first network resource to a second network resource at the direction of a user, the steps comprising:

submitting a first file location indicating data to be transferred to the second network resource, the second network resource being a subscriber-based system of network-available data storage space;

verifying the user as a subscriber to or member of the second network resource;

the second network resource requesting said data at said first file location from the first network resource;

the first network resource transmitting said data to the second network resource via Internet;

displaying to the user a status of transmission of said data from said first network resource to said second network resource; and

the second network resource notifying the user of successful transfer upon successful reception of said data; whereby

the user may use the first and second network resources to obtain and control said data.

NSDOCID: <WO 013338141 1A>

44. A client-server system for a network-based data storage and manipulation system, comprising:

a client system, said client system having a file access service and a file manipulation service;

a server, said server providing network-based data storage resources and responding to requests transmitted by said client system, said server effecting said requests;

said server determining if a client request is one for metadata regarding data stored upon said server;

said server providing said metadata if said client request is for metadata and transmitting said metadata to said file manipulation service; and

said server performing a file action if said client request is not for metadata, said server updating said metadata and transmitting said metadata to said file manipulation service; whereby

said server operates, and said client system presents, operations on said server in a manner similar to operations local to said client system.

45. The client-server system for a network-based data storage and manipulation system as set forth in claim 44, wherein said file access service further comprises:

a request processing layer for processing requests; and

a first network I/O layer for transmitting said requests to said server.

46. The client-server system for a network-based data storage and manipulation system as set forth in claim 44, wherein said file manipulation service further comprises:

a parser, said parser parsing said metadata from said server;

a data structure, said data structure receiving and preserving parsed data from said parser; and

a data display layer, said data display layer operating upon and displaying said parsed data; whereby

metadata may be displayed to inform about data stored upon said server.

47. The client-server system for a network-based data storage and manipulation system as set forth in claim 46, wherein said parser is an XML parser.

48. The client-server system for a network-based data storage and manipulation system as set forth in claim 44, wherein said server further comprises:

a second network I/O layer, said second network I/O layer engaged when said requests are not for metadata, said second network I/O layer transmitting requests for file action; and

a resource access layer, said resource access layer receiving transmissions from said second network I/O layer and effecting said requests, said resource access layer engaged when said requests are for metadata, said resource access layer obtaining and transmitting said metadata; and

a metadata compiler, said metadata compiler receiving said metadata from said resource access layer, compiling said metadata, and transmitting said compiled metadata to said client system.

49. The client-server system for a network-based data storage and manipulation system as set forth in claim 48, wherein said metadata compiler is an XML generator.

50. A client-server system for a network-based data storage and manipulation system, comprising:

a client system, said client system having a file access service and a file manipulation service;

a server, said server providing network-based data storage resources, said server creating and maintaining metadata regarding stored data, said server responding to requests transmitted by said client system, said server effecting said requests;

said server determining if a client request is one for metadata;

said server providing said metadata if said client request is for metadata and transmitting said metadata to said file manipulation service;

said server performing a file action if said client request is not for metadata, said server updating said metadata and transmitting said metadata to said file manipulation service;

said file access service having a request processing layer for processing requests and a first network I/O layer for transmitting said requests to said server;

said file manipulation service having an XML parser, said XML parser parsing said metadata from said server, said file manipulation service having a data structure, said data structure receiving and preserving parsed data from said parser, and said file manipulation service having a data display layer, said data display layer operating upon and displaying said parsed data so that metadata may be displayed to inform about data stored upon said server; and

said server having a second network I/O layer, said second network I/O layer engaged when said requests are not for metadata, said second network I/O layer transmitting requests for file action, said server having a resource access layer, said resource access layer receiving transmissions from said second network I/O layer and effecting said requests, said resource access layer engaged when said requests are for metadata, said resource access layer obtaining and transmitting said metadata, and said server having a metadata compiler in the form of an XML generator, said metadata compiler receiving said metadata from said resource access layer, compiling said metadata, and transmitting said compiled metadata to said client system; whereby

said server operates as and said client system presents operations on said server in a manner similar to operations local to said client system.

EPODOC<WO 0133381A1 IA>

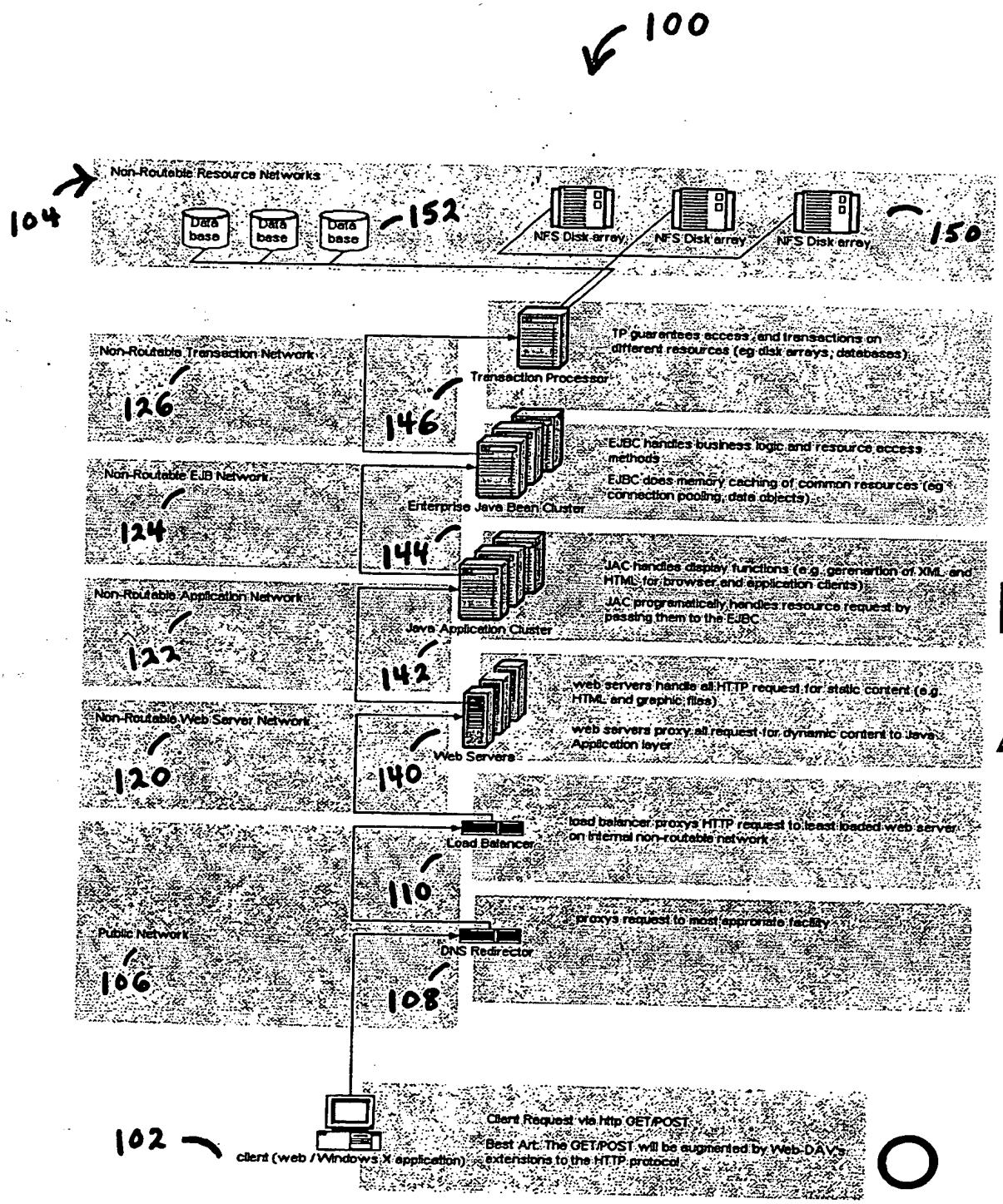

100
Non-Routable Resource Networks
104
Data base
Data base
Data base
152
NFS Disk array
NFS Disk array
NFS Disk array
150
TP guarantees access and transactions on different resources (eg disk arrays, databases)
Transaction Processor
146
Non-Routable Transaction Network
126
EJBC handles business logic and resource access methods
EJBC does memory caching of common resources (eg connection pooling, data objects)
Enterprise Java Bean Cluster
144
Non-Routable EJB Network
124
JAC handles display functions (e.g. generation of XML and HTML for browser and application clients)
JAC programatically handles resource request by passing them to the EJBC
Java Application Cluster
142
Non-Routable Application Network
122
web servers handle all HTTP request for static content (e.g. HTML and graphic files)
web servers proxy all request for dynamic content to Java Application layer
Web Servers
140
Non-Routable Web Server Network
120
load balancer proxys HTTP request to least loaded web server on internal non-routable network
Load Balancer
110
proxys request to most appropriate facility
DNS Redirector
108
Public Network
106
Client Request via http GET/POST
Best Art: The GET/POST will be augmented by Web-DAVs extensions to the HTTP protocol
102
client (web /Windows /X application)

Fig. 1

Fig. 2

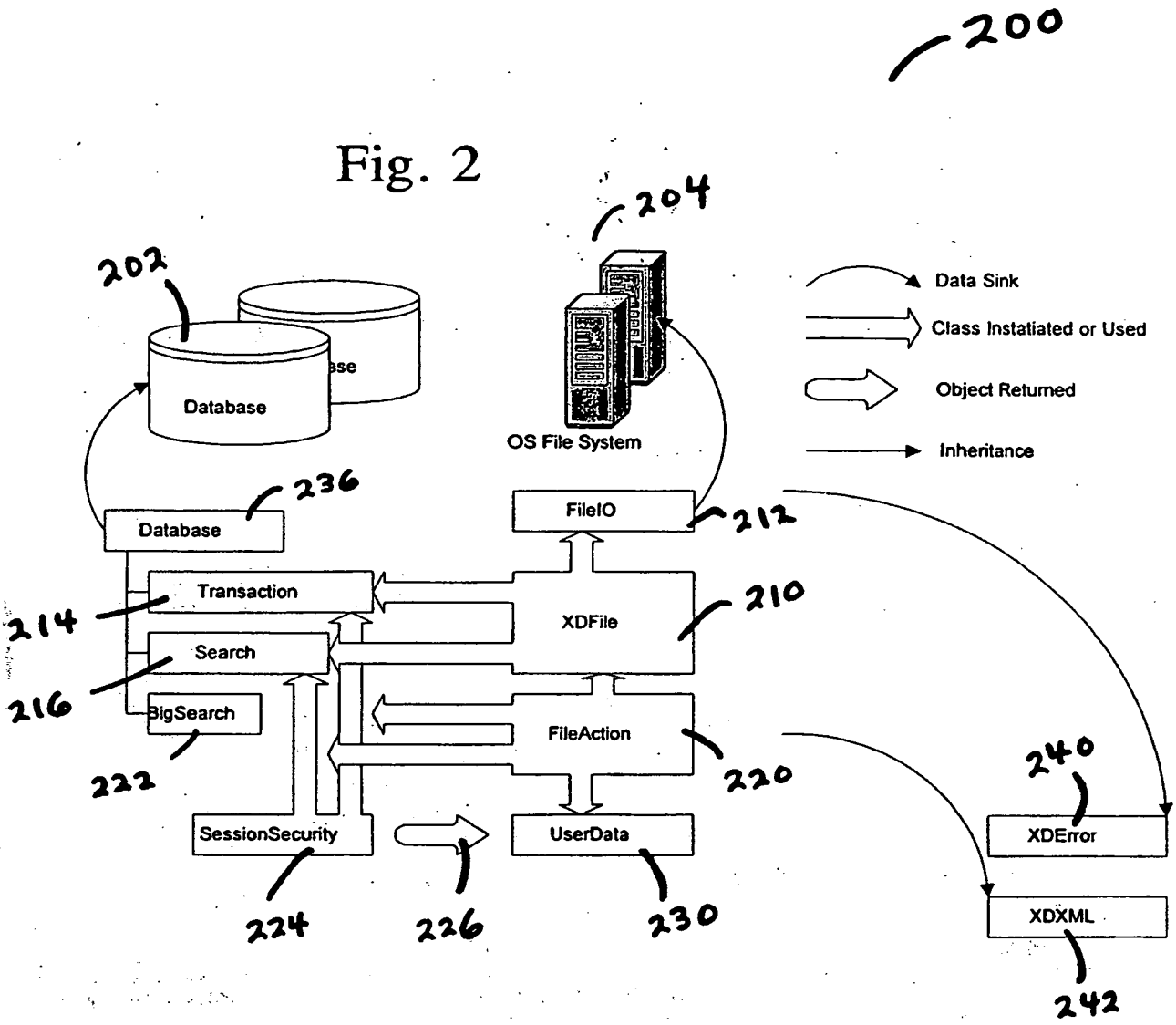

200
202
204
Database
OS File System
Data Sink
Class Instatiated or Used
Object Returned
Inheritance
236
Database
FileIO
212
Transaction
214
XDFile
210
Search
216
BigSearch
222
FileAction
220
240
XDError
SessionSecurity
224
226
UserData
230
XDXML
242

Fig. 3

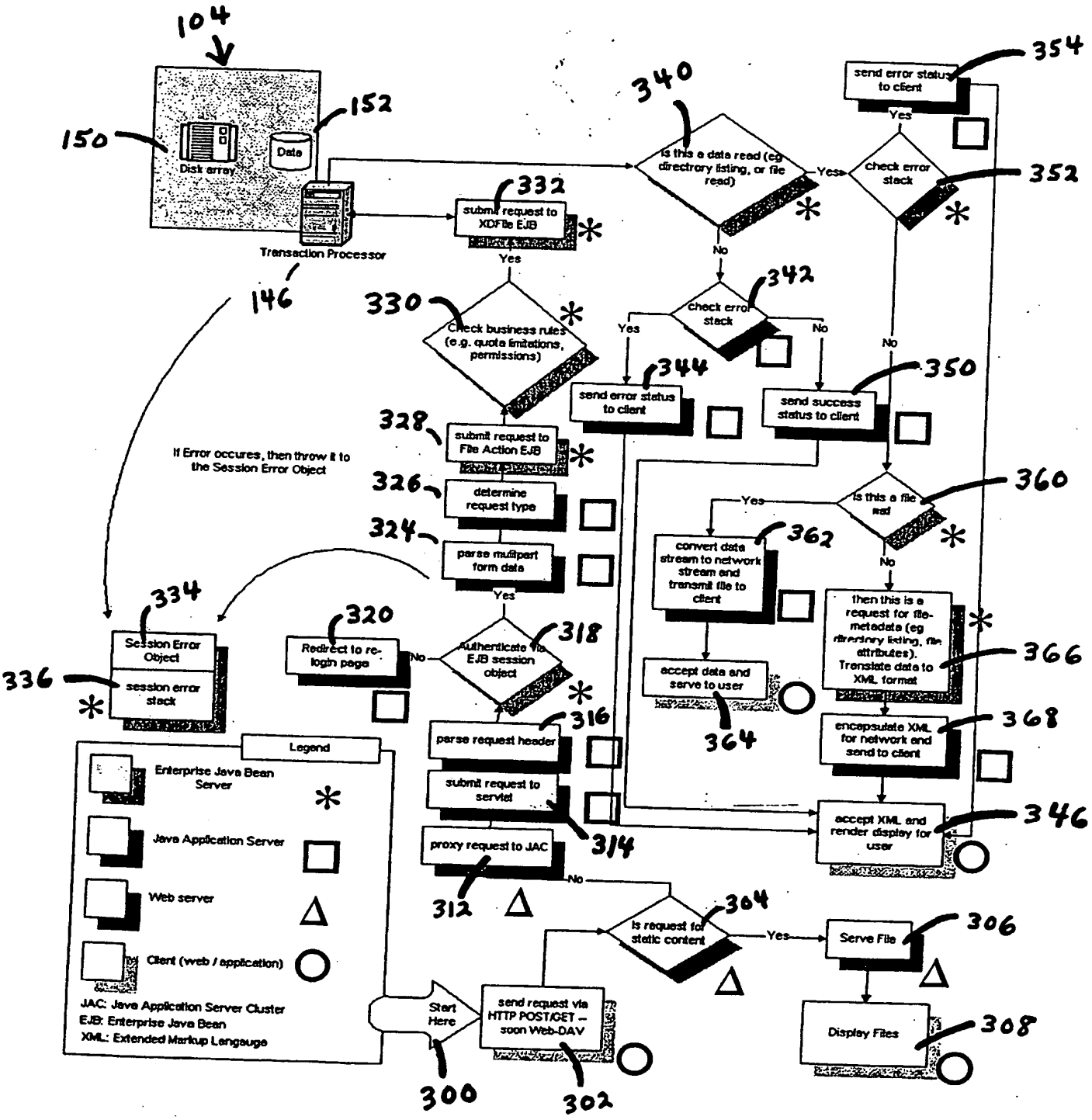

104
150
152
Disk array
Data
Transaction Processor
146
Is this a data read (eg directory listing, or file read)
340
Yes
No
send error status to client
354
check error stack
352
submit request to XDFile EJB
332
Yes
Check business rules (e.g. quota limitations, permissions)
330
Check error stack
342
Yes
No
send error status to client
344
send success status to client
350
If Error occures, then throw it to the Session Error Object
submit request to File Action EJB
328
determine request type
326
parse multipart form data
324
Is this a file read
360
Yes
No
convert data stream to network stream and transmit file to client
362
accept data and serve to user
364
then this is a request for file-metadata (eg directory listing, file attributes). Translate data to XML format
366
encapsulate XML for network and send to client
368
accept XML and render display for user
346
Session Error Object
334
session error stack
336
Redirect to re-login page
320
No
Authenticate via EJB session object
318
parse request header
316
submit request to servlet
314
proxy request to JAC
312
No
Is request for static content
304
Yes
Serve File
306
Display Files
308
Start Here
300
send request via HTTP POST/GET – soon Web-DAV
302
Legend
Enterprise Java Bean Server
Java Application Server
Web server
Client (web / application)
JAC: Java Application Server Cluster
EJB: Enterprise Java Bean
XML: Extended Markup Langauge

Fig. 4

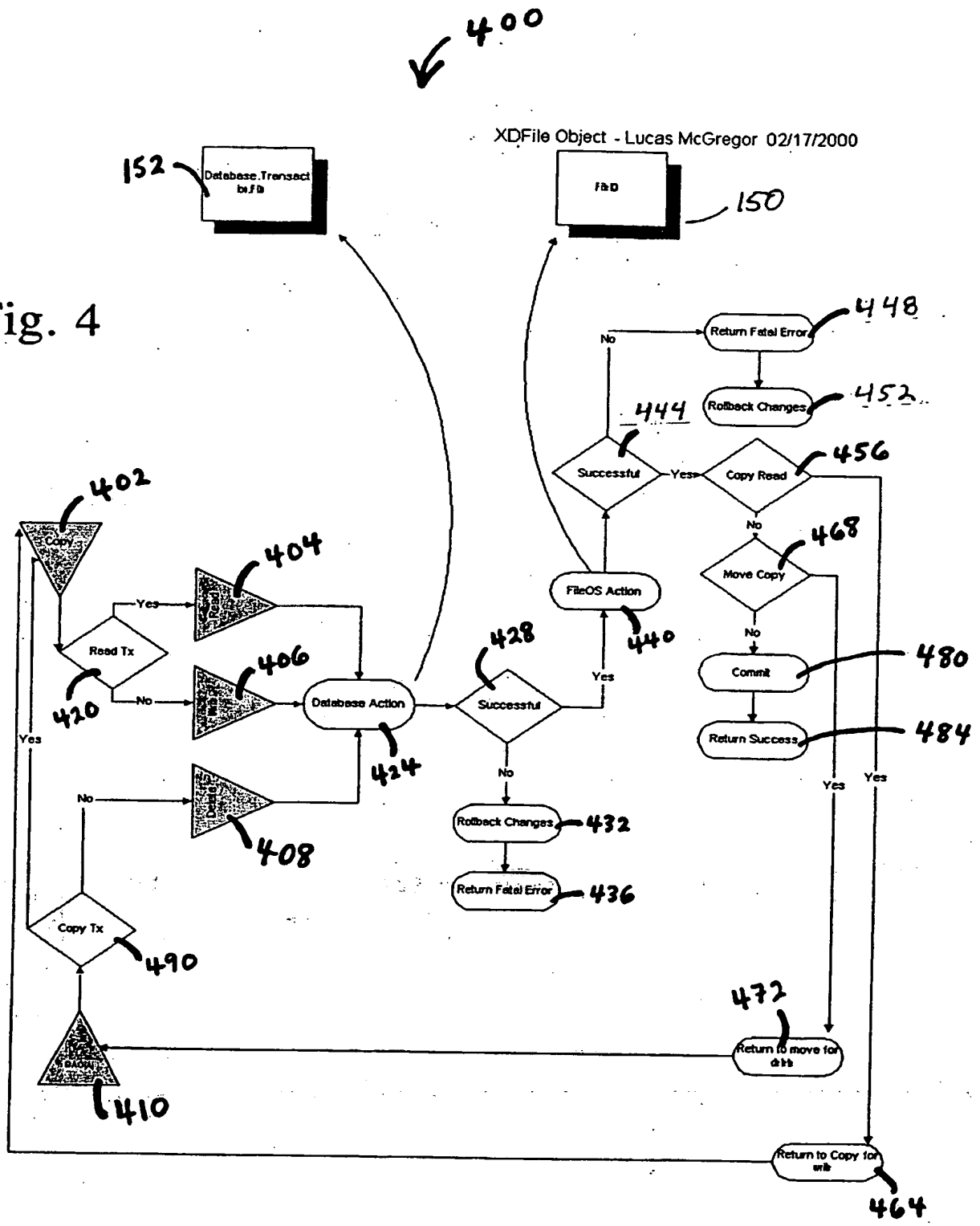
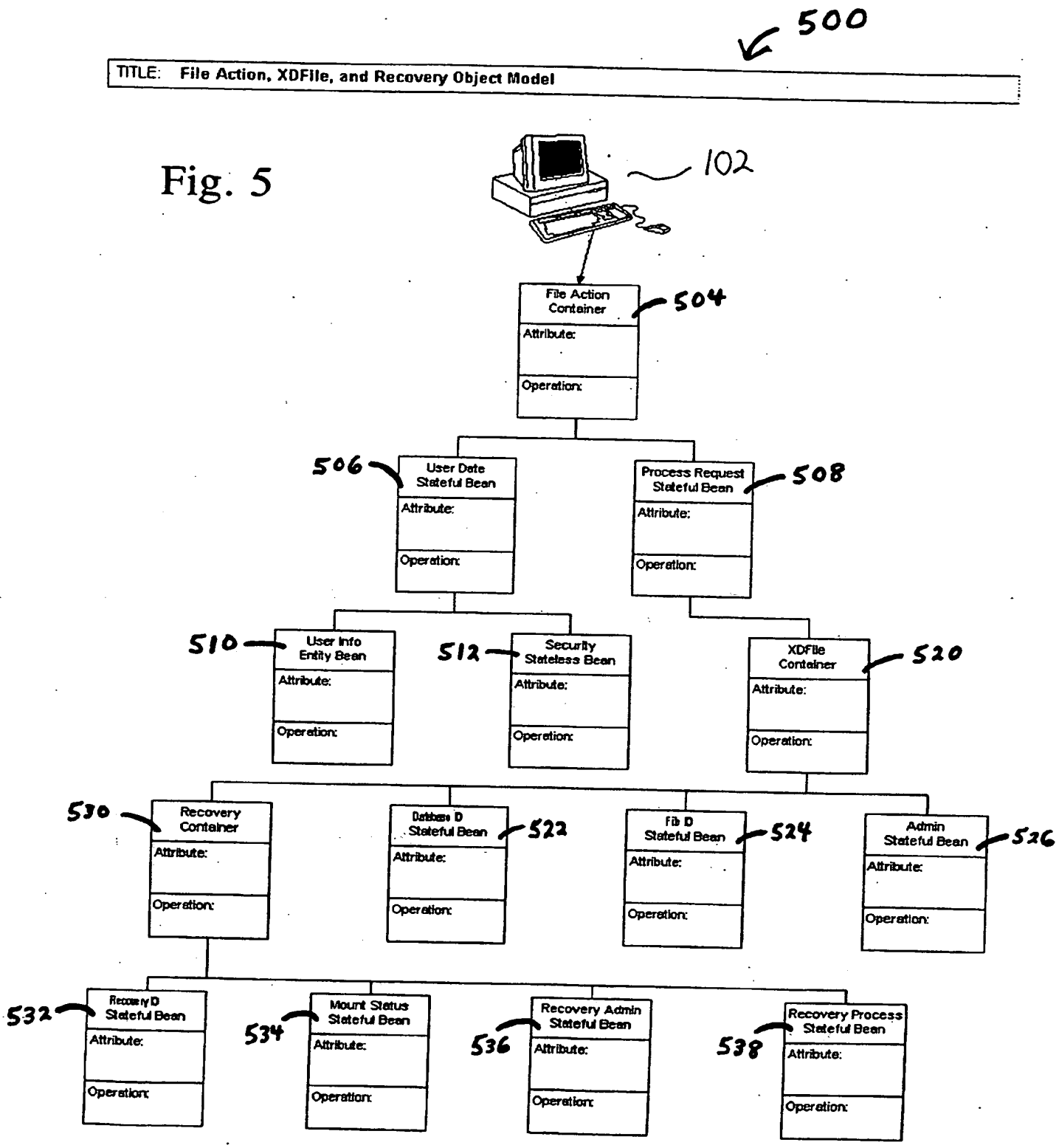

400
XDFile Object - Lucas McGregor 02/17/2000
152
Database.Transact
bxFb
FileID
150
Return Fatal Error
448
No
Rollback Changes
452
444
Successful
Yes
Copy Read
456
No
Move Copy
468
FileOS Action
440
No
Commit
480
Return Success
484
Yes
Yes
428
Successful
Yes
No
Rollback Changes
432
Return Fatal Error
436
402
Copy
Yes
Read Tx
420
No
404
406
Database Action
424
No
408
Yes
Copy Tx
490
472
Return to move for
410
Return to Copy for
464

Fig. 5


500
TITLE: File Action, XDFile, and Recovery Object Model
102
File Action Container
Attribute:
Operation:
504
506
User Date Stateful Bean
Attribute:
Operation:
Process Request Stateful Bean
Attribute:
Operation:
508
510
User Info Entity Bean
Attribute:
Operation:
512
Security Stateless Bean
Attribute:
Operation:
XDFile Container
Attribute:
Operation:
520
530
Recovery Container
Attribute:
Operation:
Database ID Stateful Bean
Attribute:
Operation:
522
Fib ID Stateful Bean
Attribute:
Operation:
524
Admin Stateful Bean
Attribute:
Operation:
526
532
Recovery ID Stateful Bean
Attribute:
Operation:
534
Mount Status Stateful Bean
Attribute:
Operation:
536
Recovery Admin Stateful Bean
Attribute:
Operation:
538
Recovery Process Stateful Bean
Attribute:
Operation:

TITLE: File Action, XDFile, and Recovery Object Model

Fig. 6

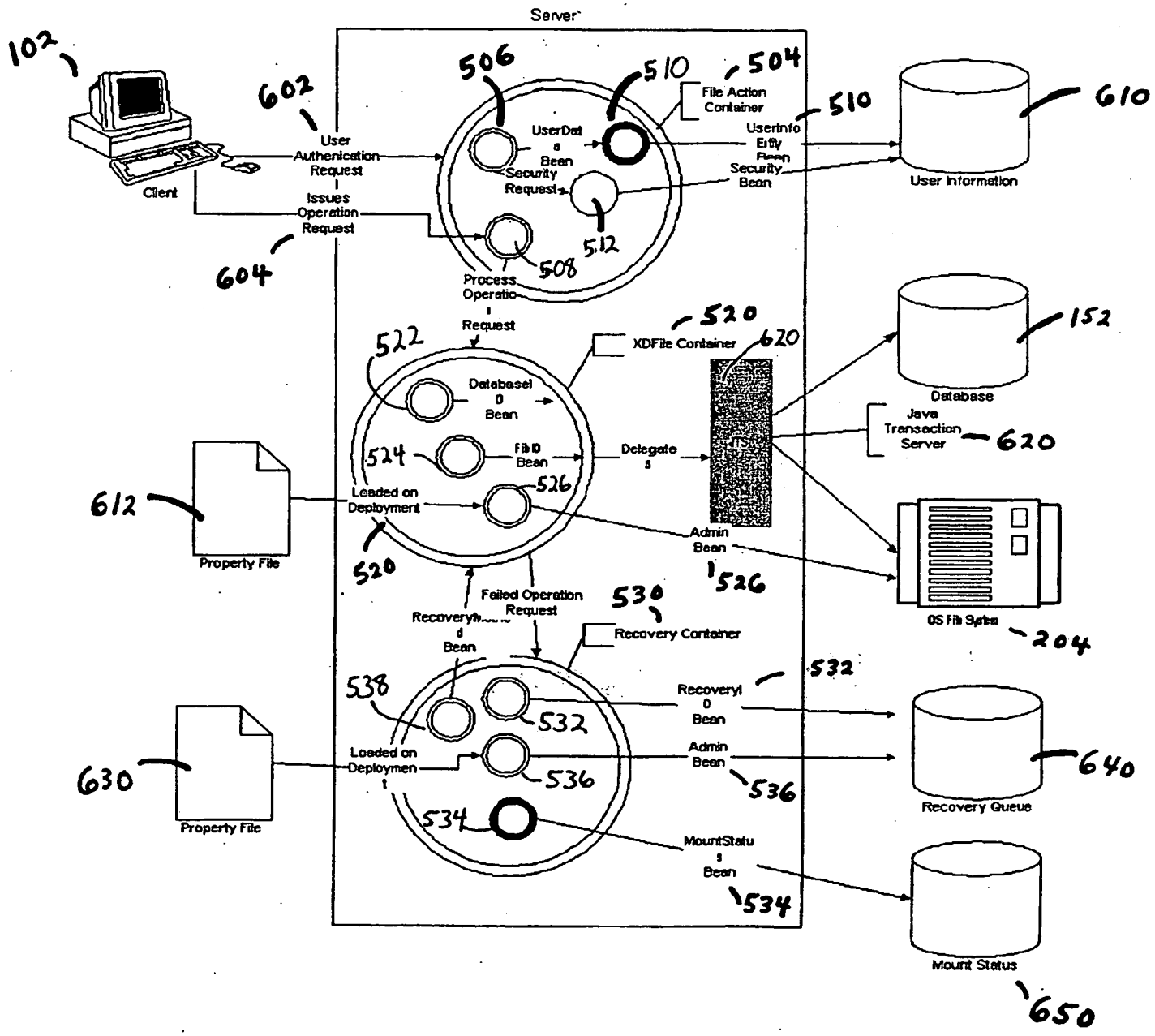
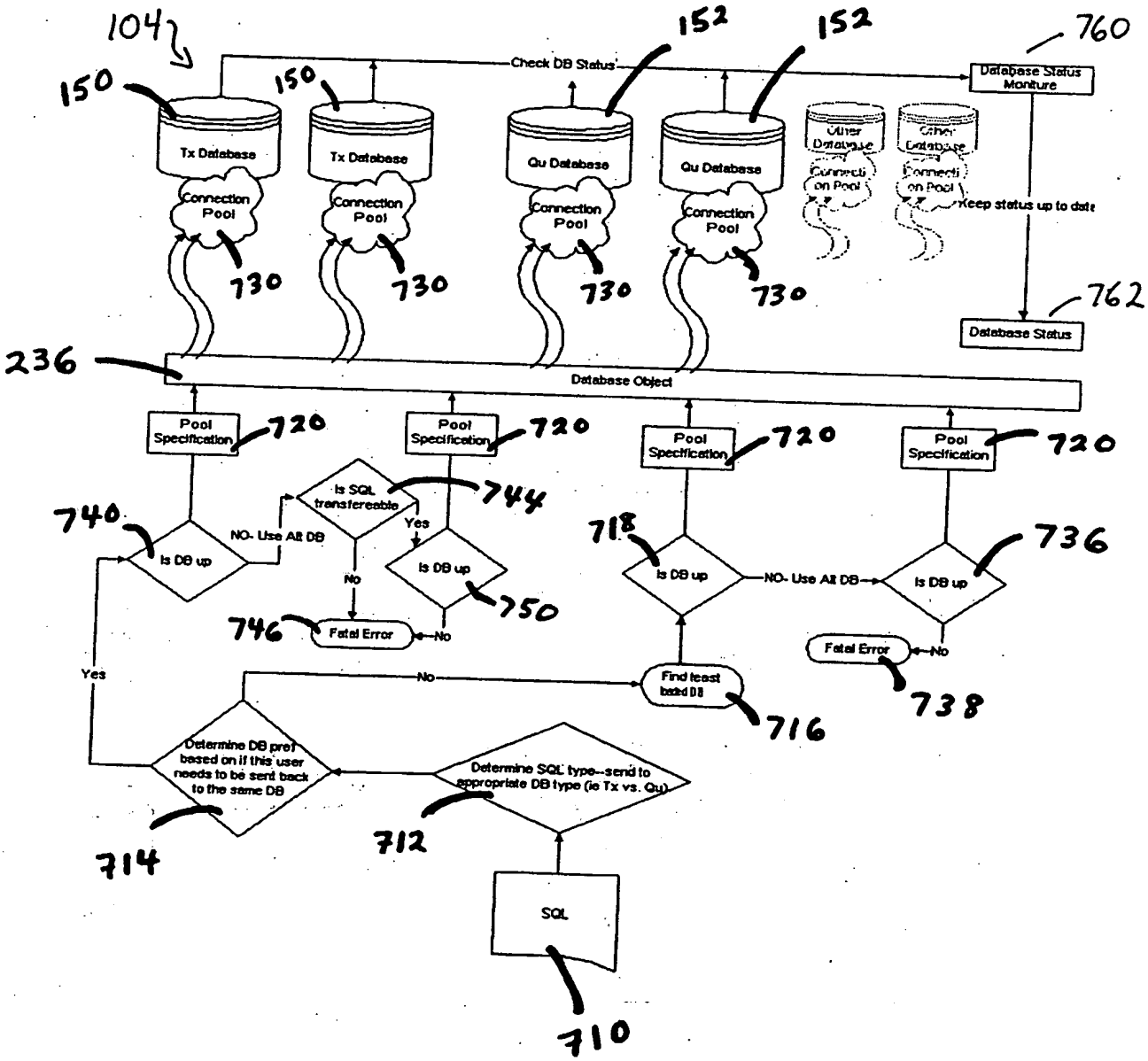


Fig. 7



NSDOCID: <WO_____0133381A1_I_>

Fig. 8

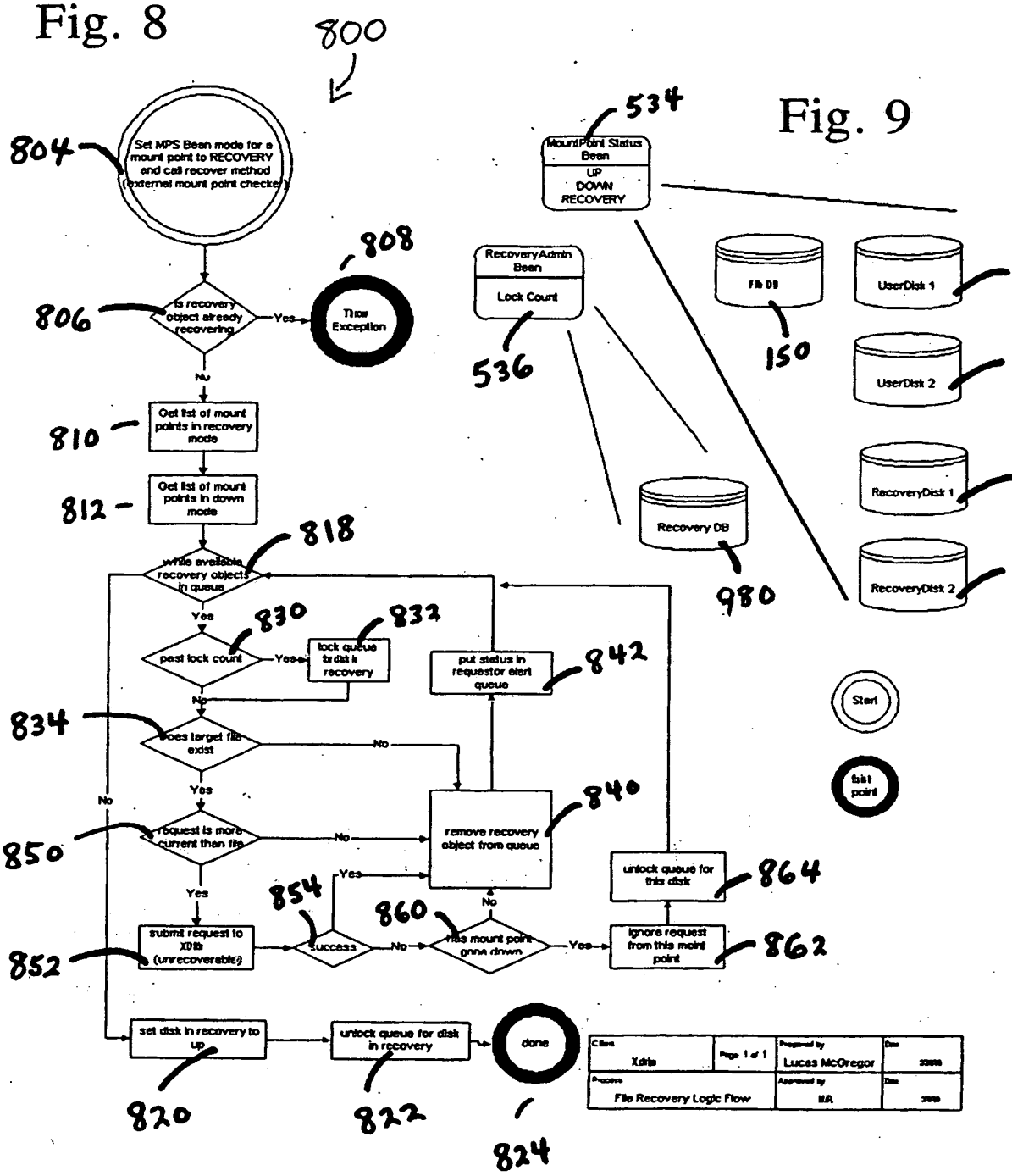

800
804
Set MPS Bean mode for a mount point to RECOVERY and call recover method (external mount point checker)
806
Is recovery object already recovering
Yes
808
Throw Exception
No
810
Get list of mount points in recovery mode
812
Get list of mount points in down mode
818
while available recovery objects in queue
Yes
830
past lock count
Yes
832
lock queue for disk in recovery
No
842
put status in requestor alert queue
834
does target file exist
No
Yes
No
850
request is more current than file
No
840
remove recovery object from queue
Yes
Yes
854
success
No
860
this mount point gone down
Yes
No
852
submit request to XDB (unrecoverable)
862
ignore request from this mount point
864
unlock queue for this disk
820
set disk in recovery to up
822
unlock queue for disk in recovery
824
done
Client
Xdrive
Page 1 of 1
Prepared by
Luces McGregor
Process
File Recovery Logic Flow
Approved by
MA

Fig. 9

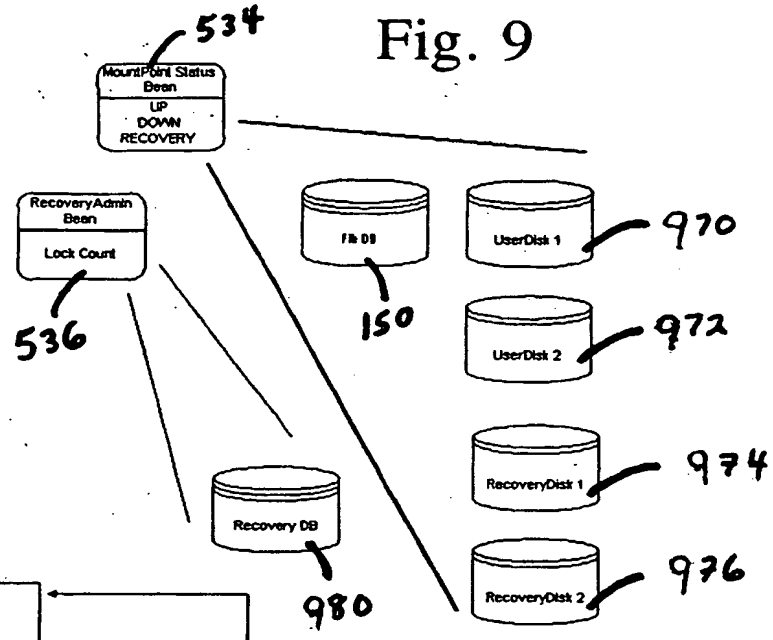

534
MountPoint Status Bean
UP
DOWN
RECOVERY
RecoveryAdmin Bean
Lock Count
536
File DB
150
UserDisk 1
970
UserDisk 2
972
RecoveryDisk 1
974
RecoveryDisk 2
976
Recovery DB
980
Start
Task point

Fig. 10

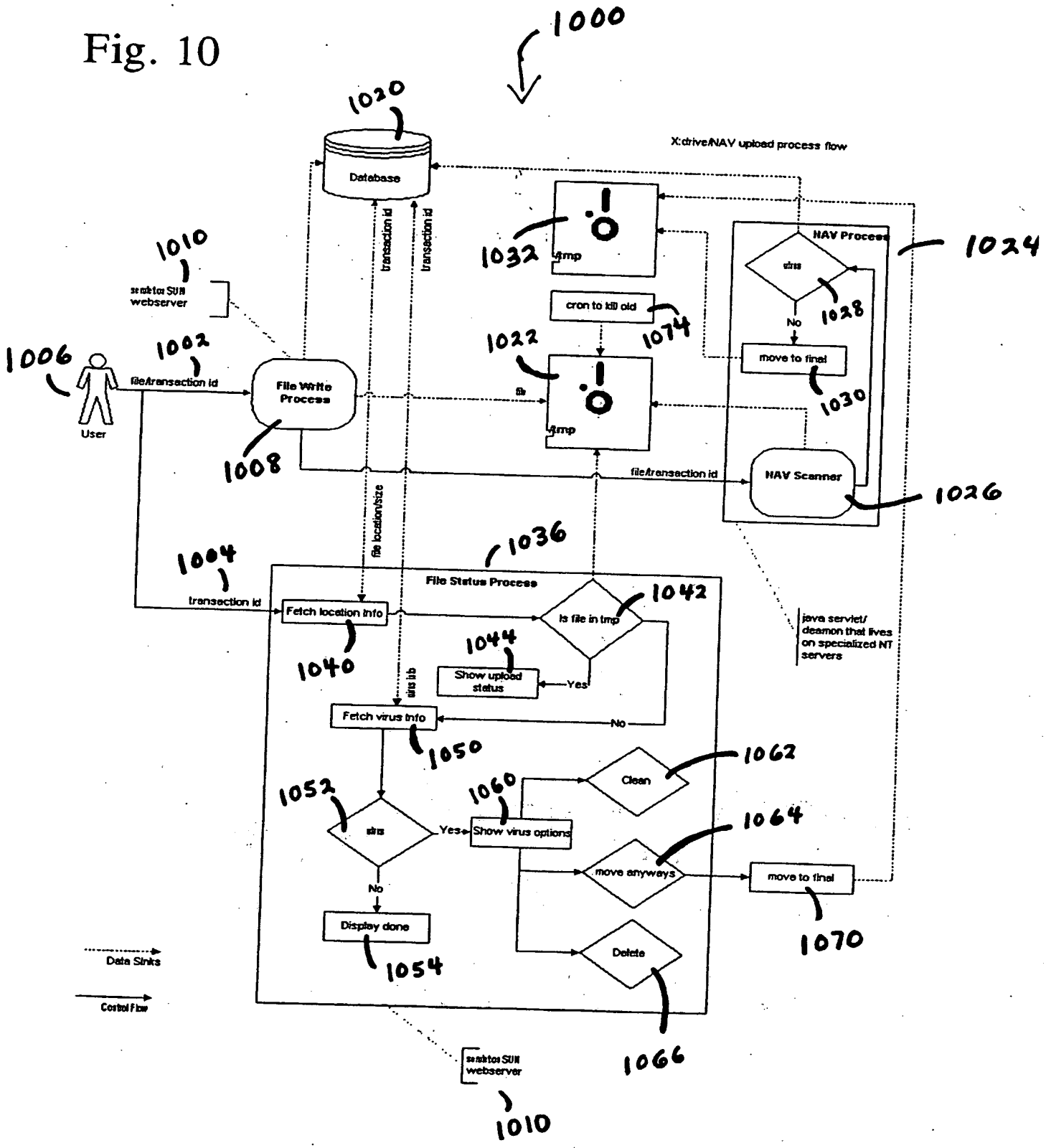

1000
1020
Database
X:drive/NAV upload process flow
1010
samba to SUN webserver
1032
tmp
NAV Process
1024
dirs
1028
No
cron to kill old
1074
1022
1006
1002
fileAtransaction id
File Write Process
fb
move to final
1030
User
1008
tmp
file/transaction id
NAV Scanner
1026
transaction id
transaction id
file location/size
1036
1004
File Status Process
transaction id
Fetch location info
1042
Is file in tmp
1040
1044
Show upload status
Yes
java servlet/ deamon that lives on specialized NT servers
virus lib
Fetch virus info
No
1050
1062
Clean
1052
1060
dirs
Yes
Show virus options
1064
move anyways
move to final
No
1070
Display done
Delete
1054
1066
Data Sinks
Control Flow
samba to SUN webserver
1010

Fig. 11

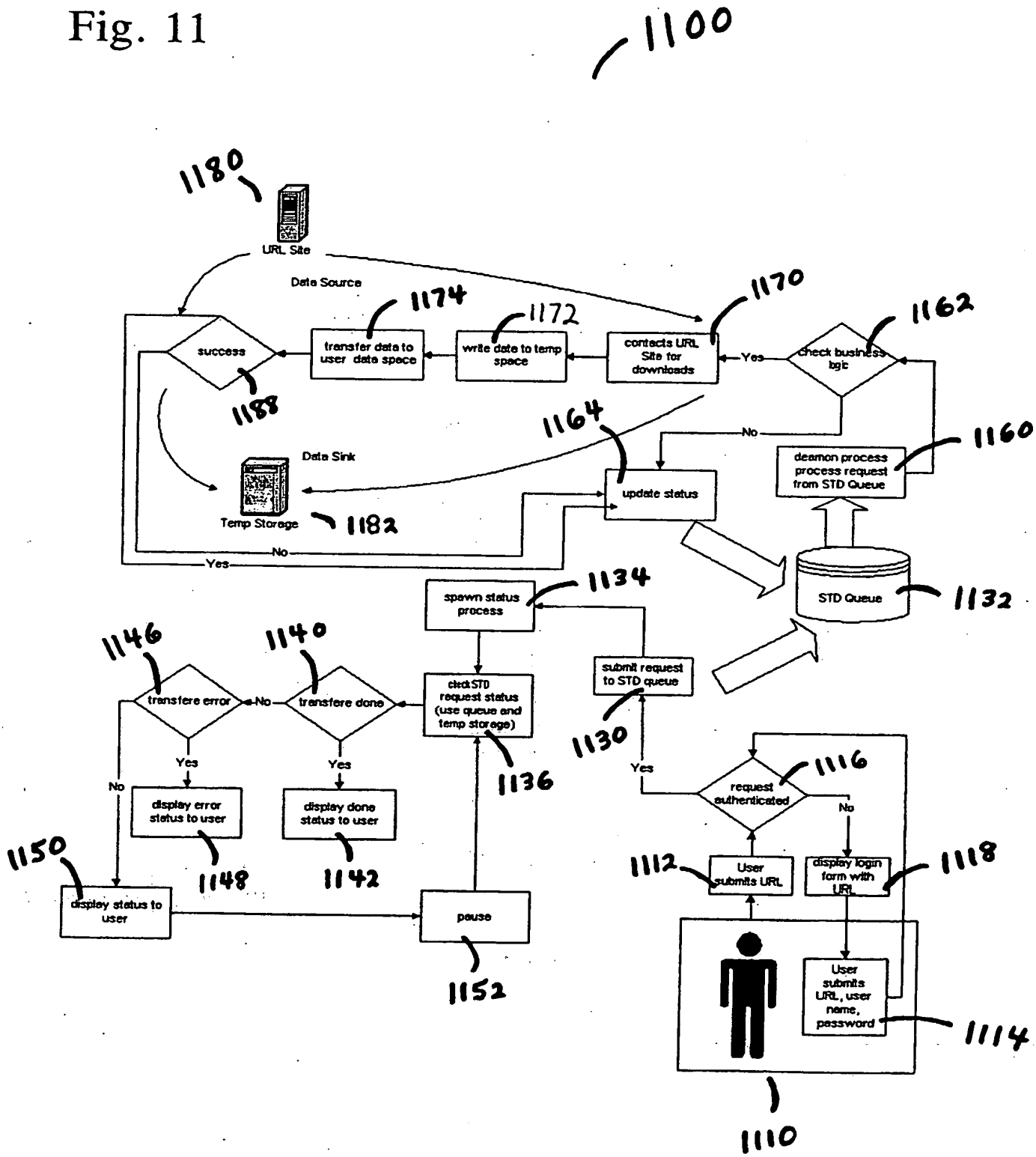

1100
1180
URL Site
Data Source
1174
1172
1170
1162
success
transfer data to user data space
write data to temp space
contacts URL Site for downloads
Yes
check business logic
1188
1164
No
Data Sink
1160
deamon process process request from STD Queue
update status
Temp Storage
1182
No
Yes
STD Queue
1132
1134
spawn status process
1146
1140
transfere error
No
transfere done
clock STD request status (use queue and temp storage)
submit request to STD queue
1130
1136
Yes
Yes
Yes
1116
request authenticated
No
No
display error status to user
display done status to user
1150
1112
User submits URL
display login form with URL
1118
1148
1142
display status to user
pause
User submits URL, user name, password
1114
1152
1110

Fig. 12

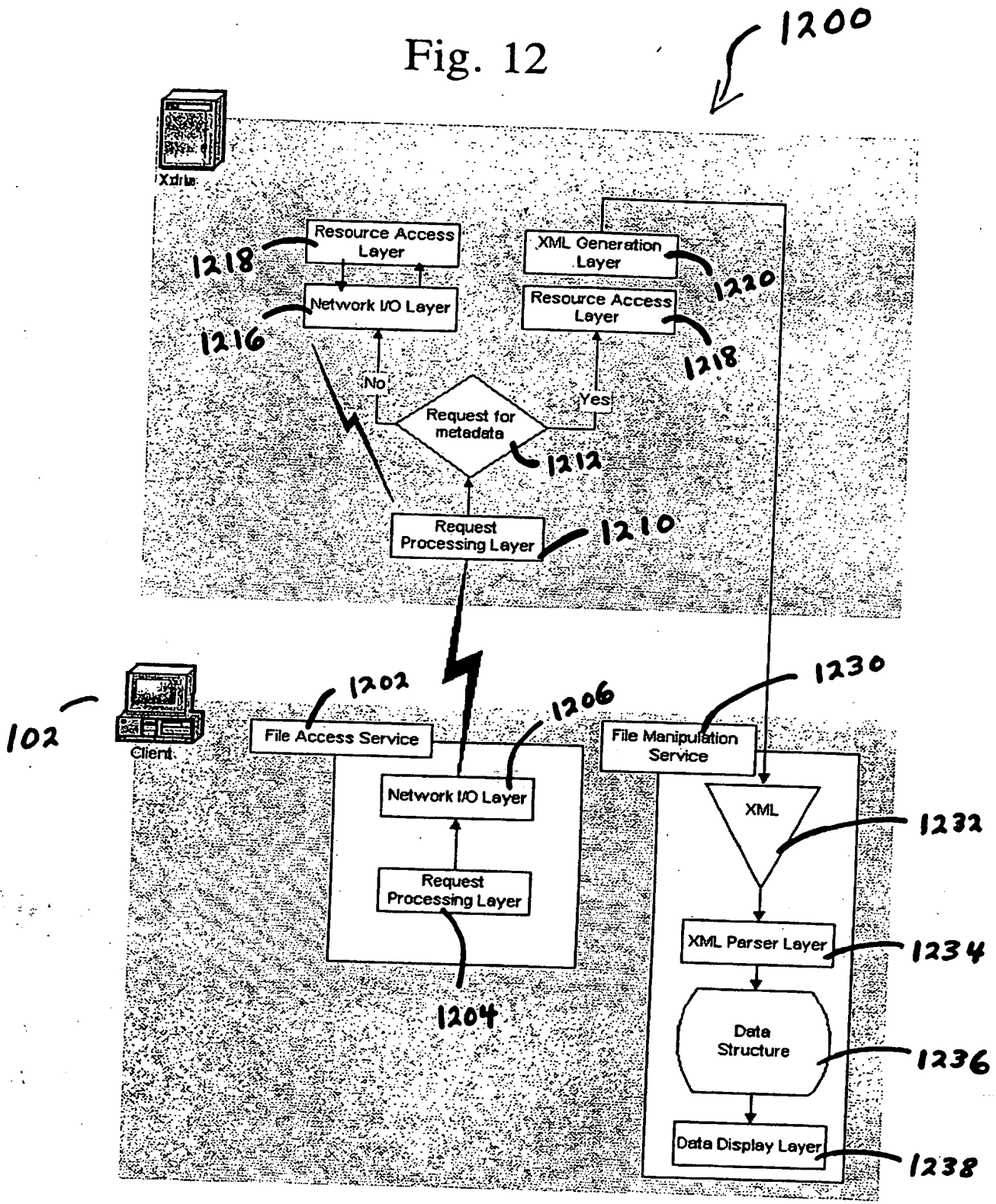
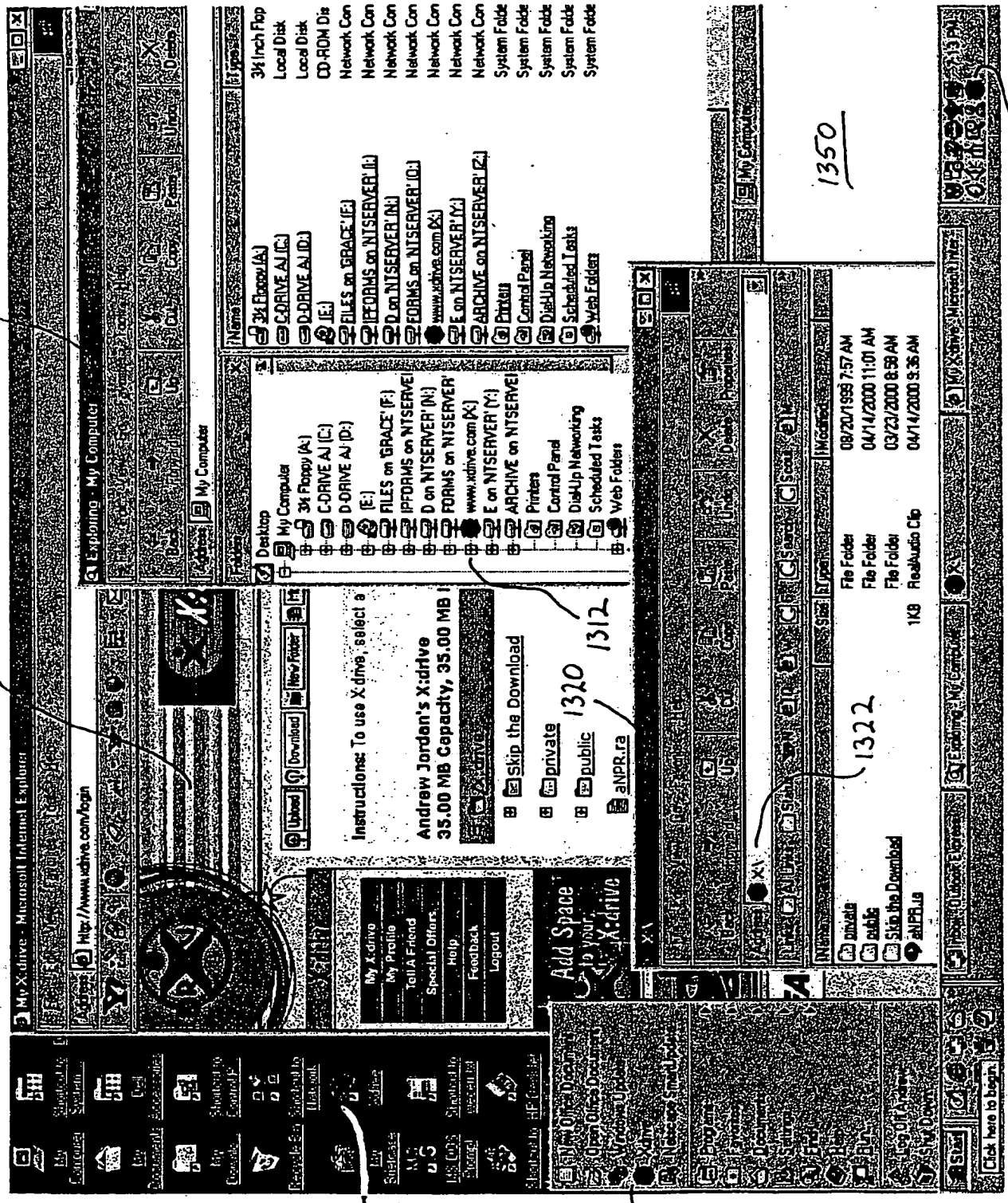

1200
Xdrive
Resource Access Layer
1218
Network I/O Layer
1216
XML Generation Layer
1220
Resource Access Layer
1218
No
Yes
Request for metadata
1212
Request Processing Layer
1210
102
Client
1202
File Access Service
1206
Network I/O Layer
Request Processing Layer
1204
1230
File Manipulation Service
XML
1232
XML Parser Layer
1234
Data Structure
1236
Data Display Layer
1238

Fig. 13



BNSDOCID: <WO_____0133381A1_I_>

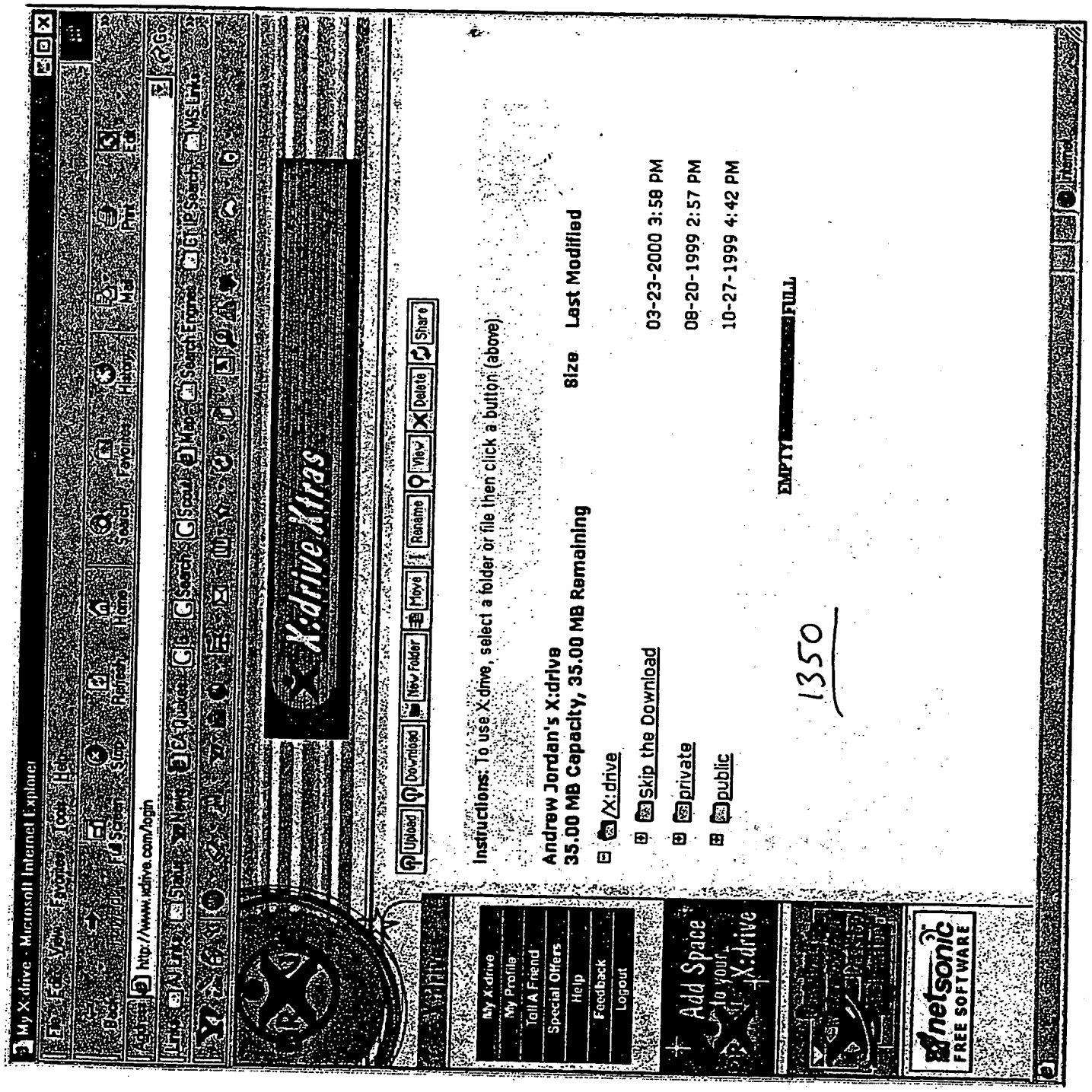


Fig. 14

NSDOCID: <WO_____0133381A1_I_>

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/30536

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :G06F 15/00, 15/16, 17/30; B41B 15/00
US CL :345/326; 707/1,10; 709/104,105,212,213,217,226,229,245
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 345/326; 707/1,10; 709/104,105,212,213,217,226,229,245

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

East, West, IEEE

search terms : network, internet, storage, resource, parse, proxy

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,861,883 A (CUOMO et al.) 19 January 1999, col. 2 line 11 - col 6 line 37	1-50
Y	US 5,956,490 A (BUCHHOLTZ et al.) 21 September 1999, col. 2-6	1-50
Y,P	US 6,049,877 A (WHITE) 11 April 2000, col. 2 line 36 to col. 9 line 57	1-50
Y,E	US 6,154,738 A (CALL) 28 November 2000, col. 4 line 1 to col. 33 line 35	1-50
Y,E	US 6,151,601 A (PAPIERNIAK et al.) 21 November 2000, col. 8 line 35 to col. 25 line 67	1-50
Y,P	US 6,128,624 A (PAPIERNIAK et al.) 03 October 2000, col. 8 line 14 to col. 25 line 27.	1-50

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search 10 JANUARY 2001	Date of mailing of the international search report 26 FEB 2001
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer FRANTZ B. JEAN James R. Matthews Telephone No. (703) 305-3900

Form PCT/ISA/210 (second sheet) (July 1998)*

BNSDOCID: <WO 01333814A1 | >

```
      ## we need to do all of this to get the reseller code to show the
correct page
      my $oDiskAccount = XDrive::DatabaseO::Table::DiskAccount->new(undef,
$oDBO);

        $oDiskAccount->loadWhere("USERNAME", $username);

        my $oUser = XDrive::DatabaseO::Table::UserData->new(undef,
$oDiskAccount->fetchDBO);

        $oUser->loadWherePK($oDiskAccount->fetchColumn("USER_SEQ"));

        my $oReseller = XDrive::DatabaseO::Table::Reseller->new(undef,
$oDiskAccount->fetchDBO);

        $oReseller->loadWherePK($oUser->fetchColumn("RESELLER_SEQ"));

     my $oTemplate = new XDrive::Template;

       $oTemplate->partner($oReseller->fetchColumn("CODE"));

       ##  originally this is where the signup_form.cgi goes
     ##$oTemplate->load('splash.thtml');
     $oTemplate->load('tell_a_friend_frame.thtml');

       ##my $addrArray  = $oCGI->param('friends_email_array');
       ##my $nameArray  = $oCGI->param('friends_name_array');
       ##my $numFriends = $oCGI->param('numFriends');

       ## generate list for the javascript array
       ##my @addrList = split /,/, $addrArray;
       ##my @nameList = split /,/, $nameArray;

       ##$addrArray = "";
       ##$nameArray = "";

       ##my $count = @addrList - 1;

       ##for (my $i = 0;$i < $count;$i++) {
          ##$addrArray .= "\"" . $addrList[$i] . "\",";
          ##$nameArray .= "\"" . $nameList[$i] . "\",";
       ##}
       ## this will add the quote without the comma

     ##$addrArray .= "\"" . $addrList[$count] . "\"";
     ##$nameArray .= "\"" . $nameList[$count] . "\"";
## gets the array started
my $tempVar;

my $tempEmail = $oCGI->param('friends_email1');
my $numFriends = $oCGI->param('numFriends');


my $addrArray  = "\"" . $tempEmail . "\"";
my $nameArray  = "\"" . $oCGI->param('friends_name1') . "\"";

## generate list for the javascript array
for (my $i = 2;$i <= $numFriends;$i++)
{
  $tempVar = $oCGI->param('friends_email' . $i);

  if ($tempVar)
  {
```


NSDOCID: <WO 01333381A1 IA>

```
        $addrArray .= ",\"" . $tempVar . "\"";
        $nameArray .= ",\"" . $oCGI->param('friends_name' . $i) . "\"";
      }
    }



    $oTemplate->tags( {'numFriends'          => $numFriends,
                       'friends_name_array'  => $nameArray,
                       'friends_email_array' => $addrArray} );

    print $oCGI->header();

    print $oTemplate->get();

    $oDiskAccount->finish();
    $oUser->finish();
    $oReseller->finish();
    $oDiskAccount->disconnect();
}


##############################################################################
## Login in user who is comming from a Skip The Download
## Registration
##############################################################################

sub std_login () {
    my $username    = shift;
    my $oCGI        = shift;
      my $sSTDPartner = shift;
      my $sLanguage   = shift;
      my $sFileURL    = shift;
      my $sFileName   = shift;
      my $sAltURL     = shift;
      my $sCatId      = shift;
      my $sGid        = shift;
      my $sSid        = shift;
    my $oDBO    = new XDrive::DatabaseO(undef);

    my $oError = new XDrive::Error;
    my $oToken = xd_login($oCGI, $username, $oError, $oDBO);
    xd_set_session_cookie($oCGI, $sSTDPartner, $sLanguage);


    my $oTemplate = new XDrive::Template
      ({
      'partner_code' => $sSTDPartner,
      'language' => $sLanguage,
      'file' => 'skip_the_download_from_reg.thtml',
      'tags' =>
              {
              'FILE_URL'  => $sFileURL,
          'FILE_NAME' => $sFileName,
          'ALTRUL' => $sAltURL,
              'LANG' => $sLanguage,
              'STDPARTNER' => $sSTDPartner,
          'CATID' => $sCatId,
          'GID' => $sGid,
          'SID' => $sSid,
              }
      });
```

```
        $oTemplate->clear();
        print "Content-type: text/html\n\n";
        print $oTemplate->get();
        $oDBO->disconnect();
}

sub contact_cybergold {
        my $oCGI  = shift;
        my $msgid = shift;
        my $email = shift;

        my %args = (
        'mint_home'     => $ENV{'MINT_HOME'},
        'msg_mode'      => 'background_mode',

        'usr_email'     => $email,
        'msg_id'        => $msgid,

        'pay_type'      => 'reward',
        'pay_value'     => '1.00',
        'pay_readme'    => 'Thanks for registering with X:drive.',

        'co_name'       => 'X Drive',
        'co_key'        => 'registration',
        'co_account'    => '100500900000396',
        'mint_secret'   => '184FEB9DB81944502A1C91B2879484B6',

        'mint_url_pay' => 'http://www1.cybergold.com/payserver?pay_server',
        'msg_version'  => '2.2'
        );

        my($code, %res) = mint_invoke(\%args);

        ##this is temp code to print out stuff for cybergold
        ##my @keys = keys %res;
        ##my @values = values %res;
        ##while (@keys)
        ##{
        ##    die pop(@keys), '=', pop(@values), "\n";
        ##}

        return $code;
}

sub write_befree_log {
        my $oCGI = shift;

        my $source_id = $oCGI->cookie('sourceid');

        ##get the time
        ##needed to figure out name of file to write to
        my ($nSec, $nMin, $nHour, $nDay, $nMonth, $nYear, $sDay) =
(localtime(time))[0,1,2,3,4,5,6];

      if ($nYear > 99) {
            $nYear = substr($nYear,1,2);
        }

        ## Numeric month is 0-11, so add one
        $nMonth++;

        ## Handle Y2K issue
```


3NSDOCID: <WO_____0133381A1_IA>

```
        if ( $nYear >= 80 ) {
                $nYear += 1900;
        }
        else {
                $nYear += 2000;
        }

        my $dToday = sprintf("%s%02d%02d", $nYear, $nMonth, $nDay);
        my $dTodayFull = sprintf("%02d%02d%s
%02d:%02d:%02d",$nMonth,$nDay,$nYear,$nHour,$nMin,$nSec);

        my $text =
"14524098\tS\t$dTodayFull\t$source_id\t1\t1\t1\t0.00\tUSD\tregistration\n";

      warn "#BF", $text, "\n";
        ##open(FILE, ">>xdrive_orders_$dToday.txt");
        ##print FILE $text;
        ##close(FILE);
}

sub send_email_referee {
        my $user_seq = shift;
        my $oDBO = shift;
      my $oCookie = shift;
        my $additional_quota = shift;
      my $referred_from = shift;

      my $language = $oCookie->getElement('language');
      my $partner = $oCookie->getElement('partner');

      if ($language eq 'spanish') {
            my $text = 'un amigo que usted refirió';
            if ($referred_from eq '2') {
                  $text = 'un usted compartió un fishero con';
            }
      }
      else {
            my $text = 'referred';
            if ($referred_from eq '2') {
                  $text = 'shared a file with';
            }
      }

      my $text = 'referred';
      if ($referred_from eq '2') {
            $text = 'shared a file with';
      }

        ##comes in as k, change to megabytes
        my $mbs = $additional_quota/1024;

        my $oUserData = XDrive::DatabaseO::Table::UserData->new(undef,
$oDBO);
        $oUserData->loadWhere("SEQ", $user_seq);
        my $email_address = $oUserData->fetchColumn("EMAIL_ADDRESS");
        my $name_first = $oUserData->fetchColumn("NAME_FIRST");
        my $name_last = $oUserData->fetchColumn("NAME_LAST");

        my $oTemplate =  new XDrive::Template( {'language'     => $language,
                                        'partner_code' => $partner} );

        $oTemplate->load('received_5MB_tellafriend.thtml');
```


BNSDOCID: <WO 01333981A1 I>

```
        $oTemplate->tags( {'mbs'   => $mbs,
                           'text' => $text} );
        $oTemplate->clear();

        my $message = $oTemplate->get;

        my %toXdrive =
            (
            To      => "$name_first $name_last <$email_address>",
            Bcc     => '',
            From    => "support\@xdrive.com",
            Message => $message,
            Subject => "Congratulations!"
            );

        sendmail(%toXdrive);

    $oUserData->finish();
}
```


BNSDOCID: <WO_____0133381A1_IA>

###signup_form.cgi

```
#!/usr/bin/perl
## Written by Martin Hald <mhald@uci.edu> on Sat, Jan 30, 1999.  Updated
## Fri Apr 5, 1996 to use new templates.  Updated Wed Apr 21 1999 to use
## new library code.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use CGI::Carp 'fatalsToBrowser';
use XDrive::CGI qw(:MAIN);
use XDrive::Client::Registration;
use XDrive::Template;
use XDrive::DatabaseO::Search;
use XDrive::Library;

use constant XD_REGISTRATION_DEFAULT_COUNTRY => 223;

exit &main;

sub main {
      my $oContent    = new XDrive::Template;
      my $oNavigation = new XDrive::Template;
      my $oLayout     = new XDrive::Template;
      my $oCGI        = new CGI;

      my $oCookie = XDrive::CGI::Cookie->new('x_session_info', $oCGI);

      my $oSearch;

        my $sReferee     = $oCGI->param('referee');
        my $sClaimTicket = $oCookie->getElement('ct');

      ## Defaults
      my $sUsername     = undef;
      my $sNameFirst    = undef;
      my $sNameLast     = undef;
      my $nYOB          = undef;
      my $nPromoSeq     = undef;
      my $nGender       = 3;
      my $sEmailAddress = undef;


        my ($country_seq, $occupation_seq, $postal_code, $ct_promo_seq);


        my %pullDownHash;
        if (XDDBConnectionCheck() && XDNFSCheck())
        {
            $oSearch = XDrive::DatabaseO::Search->new(undef);
        }
        else
        {
            $sClaimTicket = undef;
            $oSearch = undef;
            %pullDownHash = generate_db_array();
        }
     if ($sClaimTicket) {
           my $rhData = getUserData($oSearch, $sClaimTicket);
```


3NSDOCID: <WO_____0133381A1_IA>

```
            if ($rhData) {
                my $oNewCgi = CGI->new($rhData);

                $sUsername      = $oNewCgi->param('username');
                $sNameFirst     = $oNewCgi->param('name_first');
                $sNameLast      = $oNewCgi->param('name_last');
                $sEmailAddress  = $oNewCgi->param('email_address');
                      $nYOB           = $oNewCgi->param('birth_year');
                $nGender        = $oNewCgi->param('gender');
                $occupation_seq = $oNewCgi->param('occupation_seq');
                $country_seq    = $oNewCgi->param('country_seq');
                $postal_code    = $oNewCgi->param('postal_code');
            }
        }

        if ($sReferee ne "") {
            # my $oCookie = XDrive::CGI::Cookie->new('x_session_info',
$oCGI);
                my $sRefered_from = $oCGI->param('type');
            $oCookie->setElement({'partner_code'=>'xdrv'});
              $oCookie->setElement({'language'=>'english'});
                $oCookie->setElement({'referee' => $sReferee});
                $oCookie->setElement({'refered_from' => $sRefered_from});
                print "Set-Cookie: ".$oCookie->asString();
        }

      $oContent->partner('xdrv');
      $oNavigation->partner('xdrv');
      $oLayout->partner('xdrv');

      ## I'm assuming there will be one page and not a series of frames.
        ## this can be changed if need be
        # my $oCookie = XDrive::CGI::Cookie->new('x_session_info', $oCGI);
        # my $promo = $oCookie->getElement('promo');

        my $promo = $oCookie->getElement('promo');

      my $file_found;

        ##if we have a promo, try to get a special registration page
        if ($promo) {
            ##attempt to open a special registration page
                $file_found = $oLayout->load($promo . '_registration.thtml');
            if (!$file_found) {
                  ##if we cannot, open the general promo reg page
                  $file_found = $oLayout->load('promo_registration.thtml');
            }
        }

      ##is we don't have a promo then use the standard registration
        if ( (! $promo) || (! $file_found) ) {
            ## Load the required template HTML files.
            $oNavigation->load("front_nav.thtml");
            $oContent->load("front_signup.thtml");
            $oLayout->load("layout.thtml");

            $oContent->tags
            ({
            'username'          => $sUsername,
            'name_first'        => $sNameFirst,
            'name_last'         => $sNameLast,
            'email_address'     => $sEmailAddress,
```


NSDOCID: <WO_____ 0133381A1 IA>

```
            'country'           =>
xd_form_countries_db_check(XD_REGISTRATION_DEFAULT_COUNTRY,
$oSearch,\%pullDownHash),
            'occupation'        => xd_form_occupation_db_check(undef,
$oSearch,\%pullDownHash),
            'media_type'        => xd_form_media_type_db_check(undef,
$oSearch,\%pullDownHash),
            'gender'         => xd_form_gender_db_check(undef,
$oSearch,\%pullDownHash),
            'select_marketing'  => 'CHECKED',
            'select_newsletter' => 'CHECKED',
            'referee'           => $sReferee,
            });

            ## Print out the HTML and exit
            $oLayout->tags
                ({
                'header_graphic' => 'header_registration.gif',
                'title' => 'Register Now!',
                'content' => $oContent->get,
                'navigation' => $oNavigation->get
                });
      }
      elsif ($sClaimTicket) {
            $oLayout->tags
                ({
                'country'           => xd_form_countries($country_seq,
$oSearch),
                'occupation'        => xd_form_occupation($occupation_seq,
$oSearch),
                'media_type'        => xd_form_media_type(undef, $oSearch),
                'gender'            => xd_form_gender($nGender, $oSearch),
                'select_marketing'  => 'CHECKED',
                'select_newsletter' => 'CHECKED',
            'username'          => $sUsername,
            'name_first'        => $sNameFirst,
            'name_last'         => $sNameLast,
                'email_address'     => $sEmailAddress,
                'birth_year'        => $nYOB,
                'referee'           => $sReferee,
                'postal_code'       => $postal_code
                });
        }
      else {
            $oLayout->tags
                ({
                'country'           =>
xd_form_countries_db_check(XD_REGISTRATION_DEFAULT_COUNTRY,
$oSearch,\%pullDownHash),
                'occupation'        => xd_form_occupation_db_check(undef,
$oSearch,\%pullDownHash),
                'media_type'        => xd_form_media_type_db_check(undef,
$oSearch,\%pullDownHash),
                'gender'            => xd_form_gender_db_check(undef,
$oSearch,\%pullDownHash),
                'select_marketing'  => 'CHECKED',
                'select_newsletter' => 'CHECKED',
                'referee'           => $oCGI->param('referee'),
                });
      }

        $oLayout->clear;
```

```
        print $oCGI->header, $oLayout->get;
        if (defined $oSearch)
        {
          $oSearch->disconnect();
        }

      return 0;
}


## johngaa add to check of db is up or down
sub generate_db_array
{
   ## create a hash
   my %tempHash;
   my $i = 1;
   my $key;
   my @tempVal;
   open FH,"<down_data.dat";

   while(<FH>)
   {
        chomp $_;
        if ($_ =~ /^#(\w+)/g)
        {
           my @newArray;
           $i = 1;
           $key = $1;
           $tempHash{$key} = [ @newArray ];
        }
        else
        {
          @tempVal = split(/\~/,$_);

          $tempHash{$key}->[$i - 1][0] = $tempVal[0];
          $tempHash{$key}->[$i - 1][1] = $tempVal[1];
          $i++;
        }
   }

   close FH;
   return %tempHash;
}

sub xd_form_countries_db_check
{
   my $default = shift;
   my $oSearch = shift;
   my $pullDownHash = shift;
   my $returnVal;

   if (defined $oSearch)
   {
      $returnVal = xd_form_countries(XD_REGISTRATION_DEFAULT_COUNTRY,
$oSearch),
   }
   else
   {
      ## insert alternate source of countries here
      my $temp1 = $pullDownHash->{'country'};
      $returnVal = options_list(XD_REGISTRATION_DEFAULT_COUNTRY,@$temp1);
   }
```


NSDOCID: <WO 0133381A1 IA>

```
   return $returnVal;
}


sub xd_form_occupation_db_check
{
   my $default = shift;
   my $oSearch = shift;
   my $pullDownHash = shift;
   my $returnVal;

   if (defined $oSearch)
   {
      $returnVal = xd_form_occupation(undef, $oSearch),
   }
   else
   {
      ## insert alternate source of countries here
      my $templ = $pullDownHash->{'occupation'};
      $returnVal = options_list(undef,@$templ);
   }

   return $returnVal;
}

sub xd_form_media_type_db_check
{
   my $default = shift;
   my $oSearch = shift;
   my $pullDownHash = shift;
   my $returnVal;

   if (defined $oSearch)
   {
      $returnVal = xd_form_media_type(undef, $oSearch),
   }
   else
   {
      ## insert alternate source of countries here
      my $templ = $pullDownHash->{'media_type'};
      $returnVal = options_list(undef,@$templ);
   }

   return $returnVal;
}

sub xd_form_gender_db_check
{
   my $default = shift;
   my $oSearch = shift;
   my $pullDownHash = shift;
   my $returnVal;

   if (defined $oSearch)
   {
      $returnVal = xd_form_gender(undef, $oSearch),
   }
   else
   {
      ## insert alternate source of countries here
      my $templ = $pullDownHash->{'gender'};
      $returnVal = options_list(undef,@$templ);
   }
```

```
    return $returnVal;
}


## end of johngaa add
sub getPromoURI ($$) {
   my $oSearch   = shift;
   my @promo_seq = (shift);

   my $oDBH = $oSearch->fetchDBO->fetchDBH();

   my $st = "SELECT uri FROM xdrive.promo WHERE seq = ?";

   my $data = $oDBH->selectcol_arrayref($st, undef, @promo_seq);

   return $data->[0];
}

sub getUserData {
      my $oSearch = shift;
      my $sTicket = shift;

      my $oDBH    = $oSearch->fetchDBO->fetchDBH();
      my $sQuery  = "SELECT DATA FROM BATCH_USER_DATA WHERE CODE = ?";
        my $oCursor = $oDBH->prepare($sQuery);
        $oCursor->bind_param(1, $sTicket);
        $oCursor->execute;

      my $rh;
      my $sData = $oCursor->fetchrow_array();
      # my ($sData) = $oCursor->fetchrow_array();
      # eval $sData;
      # return $rh;
      return $sData;
}
```


NSDOCID: <WO 0133381A1 IA>

###signup_success.cgi

```
#!/usr/bin/perl
## This CGI allows us to pass the sst and sid on to the inner frame
##
## Modified by Justin White on 10/14/99 by manually printing the
## header to the browser and getting rid of the XDrive::CGI import.
## Created new cgi, database, and error objects to pass to xd_security_check.
## Also added the exit in the sub call.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI::Carp qw(fatalsToBrowser);
use CGI ();
use Token;
use XDrive::Client::Security;
use XDrive::Template;
use XDrive::DatabaseO;
use XDrive::Error;
use XDrive::Library;
use XDrive::CGI::Cookie;

&main();

exit;

sub main
      {
        my $oCGI     = new CGI;
        my $oDBO     = new XDrive::DatabaseO;
        my $oErr     = new XDrive::Error;
      my $oCookie = new XDrive::CGI::Cookie('x_session_info', $oCGI);

        ####
        ## Attempt to autenticate the user
        ####

        my $oToken = xd_security_check($oDBO,$oCGI,$oErr);

        ####
        ## If the autentication fails or there is an error during the
        ## autentication phase then redirect to the error CGI
        ####

        if ($oErr->Occurud)
                {
                xd_fatal_error($oCGI,$oErr);
                exit;
                }

        ####
        ## Otherwise we have a valid session
        ####

        my $sUsername = $oToken->data('user');

      ### Edited by Justin so that the partner_code is looked for in
      ### the cookie instead of the token table.
        # my $sPartner  = $oToken->data('partner_code');
        my $sPartner = $oCookie->getElement('partner');
```

```
        if (! defined $sPartner)
        {
           $sPartner = "xdrv";
           $oCookie->setElement({'partner'=>$sPartner});
           print "Set-Cookie: ",$oCookie->asString();
        }

        my $oTemplate = new XDrive::Template( {'partner_code' => $sPartner}
);

        $oTemplate->load('signup_success.thtml');
        $oTemplate->tags( {'username' => $sUsername} );

        print "content-type: text/html\n\n";

        print $oTemplate->get();

      $oDBO->disconnect();

        return 0;
}
```


BNSDOCID: <WO 01333181A1 IA>

###signup_toc.cgi

```
#!/usr/bin/perl
## Written by Martin Hald <mhald@uci.edu> on Sat, Jan 30, 1999.  Updated
## Fri Apr 5, 1996 to use new templates.
##
## Modified by Justin White on 10/11/1999 so that it sets a cookie.
##
## Modified by Martin Hald on 11/15/1999 so that is now accepts
##    - partner
##    - language
##    - agreeuri
##    - disagreeuri

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI;
use CGI::Carp qw(fatalsToBrowser);
use XDrive::Template;
use XDrive::CGI::Cookie;

&main();

exit;

sub main {
      my $cookie;
      my $sPartnerCode;

      my $oCGI    = new CGI;
      my $oCookie = XDrive::CGI::Cookie->new('x_session_info', $oCGI);
      my $sReferee = $oCGI->param('referee');
      my $sPartner = $oCGI->param('partner');
      my $sLanguage = $oCGI->param('language');
      my $sRefered_from = $oCGI->param('type');

      $oCookie->setElement({'partner_code'=>$sPartner});
      $oCookie->setElement({'language'=>$sLanguage});

      if ($sReferee ne "") {
            $oCookie->setElement({'referee' => $sReferee});
            $oCookie->setElement({'refered_from' => $sRefered_from});
            print "Set-Cookie: ".$oCookie->asString();
      }

      if (! defined $sPartner) {
            $sPartner = 'xdrv';
      }

      ## Load the terms and conditions
      my $hDefaults = {'partner_code'=>$sPartner,'cookie'=>$oCookie};
      my $oContent  = new XDrive::Template($hDefaults);
      my $oLayout   = new XDrive::Template($hDefaults);

      $oContent->load('presignup.thtml');

      if ($sPartner eq 'xdrv') {
            my $oNavigation = new XDrive::Template($hDefaults);
            my $oHeader     = new XDrive::Template($hDefaults);
            my $oFooter     = new XDrive::Template($hDefaults);
```


BNSDOCID: <WO 013338141 IA>

```
        $oLayout->load('layout.thtml');
        $oNavigation->load('front_nav.thtml');
        $oHeader->load('presignup_header.thtml');
        $oFooter->load('presignup_footer.thtml');
        $oContent->tags({'header'    => $oHeader->get,
                         'footer'    => $oFooter->get, });
        $oLayout->tags({'navigation'     => $oNavigation->get,
                        'header_graphic' => 'header_registration.gif',});
    } else {
        $oLayout->load('tac_wrapper.thtml');
    }

    my $sAgreeURI    = $oCGI->param('agreeuri');
    my $sDisagreeURI = $oCGI->param('disagreeuri');

    $oLayout->tags({ 'title'       => 'Terms and Conditions',
                     'content'     => $oContent->get,
                     'agreeuri'    => $sAgreeURI,
                     'disagreeuri' => $sDisagreeURI,});
    $oLayout->clear;

    print $oCGI->header();
    print $oLayout->get;

    return 0;
}
```


BNSDOCID: <WO 0133381A1_IA>

###skip_the_download.cgi

```
#!/usr/bin/perl

use strict;
use lib $ENV{PERL_XDRIVE_LIB};

use CGI qw(param redirect header cookie);
use CGI::Cookie;

use LWP::UserAgent;

use CGI::Carp qw(fatalsToBrowser);
use XDrive::Client::Security;
use XDrive::Client::Actions;
use XDrive::DatabaseO::Table::DiskAccount;
use XDrive::DatabaseO::Search;
use XDrive::DatabaseO::Transaction;
use XDrive::Template;
use XDrive::CGI qw(:MAIN);
use XDrive::CGI::Cookie;
use XDrive::DatabaseO;
use XDrive::Error;

use constant TRUE => (1==1);
use constant FALSE => ! TRUE;
use Token;


my $oDBO = new XDrive::DatabaseO;
main($oDBO);

$oDBO->disconnect;
exit;

##############################################################################
## NOTE: Remove the quota check from here.  will be handled in java.
##############################################################################

sub main
      {

      my $oDBO = shift;
      my $oCGI    = CGI->new();
      my $oErr = new XDrive::Error;
      my $oCookie = XDrive::CGI::Cookie->new('xd_std_info', $oCGI);


      ## params for file url and file name
      my $sFileURL  = $oCGI->param('FILEURL');
      my $sFileName = $oCGI->param('FILENAME');
      my $sAltURL   = $oCGI->param('ALTURL');
      my $ssSid     = $oCGI->param('SID');
      my $sGid      = $oCGI->param('GID');
      my $sCatId      = $oCGI->param('CATID');
      my $sPartnerCode = $oCGI->param('STDPARTNER');
      my $sLanguageCode = $oCGI->param('LANG');
      my $sUsername = $oCGI->param('user');
      my $sPassword = $oCGI->param('pass');
      my $sError    = $oCGI->param('error');
      my $sCookie   = $oCGI->cookie('SST');
```


3NSDOCID: <WO_____0133381A1_IA>

```
        my $sessionCookie;
        my $sPromo = '';
        my $sPartnerParams = "";
        my $sCNetString = "";


        ## IF THE SPECIAL C|NET VARIABLES ARE DECLARED
        ## THEN GENERATE THE C|NET STRING
        ## THIS URL IS CALLED FOR ANY FILE DOWNLOADED
        ## FROM C|NET SO THAT THEY CAN CREDIT THE FILE
        ## BEING DOWNLOADED
        if (
            ($sSid != '') &&
            ($sGid != '') &&
            ($sCatId != '')
            ) {


            $sAltURL = "http://beta.cnet.com/downloads/0-" . $sCatId . "-107-"
. $sSid . ".html?tag=ex.dl.xdrive";

            ## IF YOU ARE ON THE TEST SERVERS,
            ## THEN USE C|NET'S TEST URL
            if (
              ($ENV{'HTTP_HOST'} eq 'martini.xdrive.com') ||
              ($ENV{'HTTP_HOST'} eq 'antifreeze.xdrive.com')
              ){

              $sCNetString = "http://abv-sjc2-
export2.cnet.com/downloads/0,10152,0-" .
                             $sCatId .
                            "-110-" .
                            $sSid .
                            ",00.html?gid=" .
                            $sGid .
                            "&tag=ex.dl.xdrivepop.dlcgi." .
                             $sSid;

              ## ELSE, USE THEIR REAL URL
            } else {

              $sCNetString = "http://abv-sjc1-
export2.cnet.com/downloads/0,10152,0-" .
                             $sCatId .
                            "-110-" .
                            $sSid .
                            ",00.html?gid=" .
                            $sGid .
                            "&tag=ex.dl.xdrivepop.dlcgi." .
                             $sSid;

            }

        }


        $sPartnerParams =
"STDPARTNER=$sPartnerCode&LANG=$sLanguageCode&ALTURL=$sAltURL";

        $oCookie->setElement(
                          {
                           'FILEURL'     => $sFileURL,
                           'FILENAME'    => $sFileName,
```


BNSDOCID: <WO 0133381A1_IA>

```
                        'ALTURL'      => $sAltURL,
                        'STDPARTNER' => $sPartnerCode,
                        'LANG'        => $sLanguageCode,
                        'CATID'       => $sCatId,
                        'SID'         => $sSid,
                        'GID'         => $sGid,
                    });

    print "Set-Cookie: ". $oCookie->asString();

    my $n = 0;
    my $rv;

    ## Create the database object
    my $oSearch = XDrive::DatabaseO::Search->new($oDBO);

    ##The token for the user session
    my $oToken;

    ## If u/p
    if (defined $sUsername && defined $sPassword)
          {
          ## Auth or fail
          if (xd_auth_password($sUsername, $sPassword, $oDBO))
                {
                $oToken = xd_login($oCGI,$sUsername,$oErr);
                $sessionCookie = xd_set_session_cookie($oCGI,
$sPartnerCode, $sLanguageCode, $sPromo);
                }
          else
                {
                ## Login failed
                my $r = getHTMLContent
                      (
                      'skip_the_download_login_failed.thtml',
                       $sFileURL,
                      $sFileName,
                      $sAltURL,
                      $sPartnerCode,
                      $sLanguageCode
                      );

                print "Content-type: text/html\n\n";
                print $r;
                return 1;
          }


    }
          ## error or cookie not defined
    elsif ( (length($sError) > 0) || (length($sCookie) == 0) )
          {
          ## show the login page
          my $r = getHTMLContent('skip_the_download_login.thtml',
                                 $sFileURL,
                                 $sFileName,
                                 $sAltURL,
                           $sPartnerCode,
                           $sLanguageCode
                           );

          print "Content-type: text/html\n\n";
          print $r;
```


INSDOCID: <WO_____0133381A1_IA>

```
            return 1;
            }
      else
            ## cookie defined so authenticate it
            {
            $oToken = xd_security_check($oDBO,$oCGI,$oErr);
            $sessionCookie = xd_set_session_cookie($oCGI, $sPartnerCode,
$sLanguageCode, $sPromo);

            if ($oErr->Occurud)
                  {
                  print $oCGI->redirect("/cgi-
bin/skip_the_download.cgi?&error=expired&$sPartnerParams");
                      return 1;
                  }
            }


      if (!$sFileURL) {
          my $thtml = ($sAltURL != '')?
'skip_the_download_no_alt_error.thtml'
                                    : 'skip_the_download_error.thtml';


          my $sMessage = $oErr->ReturnMessageGivenCode(1220);

          &ThtmlErrorOut($thtml,
                      $sMessage,
                      $sFileURL,
                      $sFileName,
                      $sAltURL,
                      $sPartnerCode,
                      $sLanguageCode
                      );
      }


      ## create the Actions object and download the file
      my $oAction = new XDrive::Client::Actions($oToken,$oCGI);

      ## set the filename and file url
      $oAction->STDFilename($sFileName);
      $oAction->STDURL($sFileURL);

      ## see if file exists. if yes, give em message
      my $bFileExists = $oAction->STDFileExists();

      if ($bFileExists)
            {
            $oDBO->disconnect();
            my $sMessage = $oErr->ReturnMessageGivenCode(1242);

      ErrorOut($sMessage,$sFileURL,$sFileName,$sAltURL,$sPartnerCode,$sLangua
geCode);
            }

      ## Check that the file is not already being downloaded
      if ($oSearch->XDSTDBeingDownloaded($oToken->user,$sFileURL))
            {
            $oDBO->disconnect();
            my $sMessage = $oErr->ReturnMessageGivenCode(1243);
```


BNSDOCID: <WO_____0133381A1_IA>

```
        ErrorOut($sMessage,$sFileURL,$sFileName,$sAltURL,$sPartnerCode,$sLangua
  geCode);
              }

        ## Spool the action to download the file
        my $oTransaction = new XDrive::DatabaseO::Transaction($oDBO);
        my $nSeq = $oTransaction->insertSkipTheDownload
              (
              $oToken->user,
              $sFileName,
              $sFileURL,
              0,
              undef
              );
        $oTransaction->commit;

        ## Insert failed return an error
        if ($nSeq < 0)
              {
              $oDBO->disconnect();
              my $sMessage = $oErr->ReturnMessageGivenCode(1244);

        ErrorOut($sMessage,$sFileURL,$sFileName,$sAltURL,$sPartnerCode,$sLangua
  geCode);
              }

               ## IF THE INSERT DIDN'T FAIL,
               ## AND THE SPECIAL C|NET URL ISN'T NULL
               ## THEN CREDIT C|NET
               elsif ($sCNetString ne '')
               {

                 my $oUA = new LWP::UserAgent;
                 $oUA->agent("XDriveSTD/0.1 " . $oUA->agent);

                 # Create a request
                 my $oRequest = new HTTP::Request GET => $sCNetString;

                 # Pass request to the user agent and get a response back
                 my $oResult = $oUA->request($oRequest);

               }
```

```
      print redirect("/cgi-
bin/skip_the_download_status.cgi?seq=$nSeq&$sPartnerParams");
}


sub ErrorOut ()
{
    my $sMessage = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;
```


NSDOCID: <WO_____0133381A1_IA>

```
    my $html = &getHTMLContent('skip_the_download_no_alt_error.thtml',
                            $sFileURL,
                            $sFileName,
                            $sAltURL,
                            $sPartnerCode,
                            $sLanguageCode,
                            $sMessage,
                            );


    print "Content-type: text/html\n\n";
    print $html;
    exit(0);
}


sub ThtmlErrorOut ()
{
    my $thtml = shift;
    my $sMessage = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;

    my $html = &getHTMLContent($thtml,
                            $sFileURL,
                            $sFileName,
                            $sAltURL,
                            $sPartnerCode,
                            $sLanguageCode,
                            $sMessage,
                            );


    print "Content-type: text/html\n\n";
    print $html;
    exit(0);
}

sub getHTMLContent
{
   my $thtmlfile = shift;
   my $sFileURL = shift;
   my $sFileName = shift;
   my $sAltURL = shift;
   my $sPartnerCode = shift;
   my $sLanguageCode = shift;
   my $sMessage = shift;

   my $template = new XDrive::Template
      ({
      'partner_code' => $sPartnerCode,
      'language' => $sLanguageCode,
        'file' => $thtmlfile,
        'tags' =>
            {
            'FILE_URL' => $sFileURL,
            'FILE_NAME' => $sFileName,
            'ALTURL' => $sAltURL,
            'LANG' => $sLanguageCode,
```


RNSDOCID: <WO 0133381A1 IA>

```
            'STDPARTNER' => $sPartnerCode,
            'message' => $sMessage,
            }
        });

    $template->clear();

    return $template->get;
}

## Create a string which makes the previously created
## cookie expire.

sub empty_cookie
    {
        my $oSelf = shift;
        my $cookie = new CGI::Cookie
        (
        -name    =>  'sst',
        -value   => '',
        -expires => '-1M'
        );
        print header(-cookie=>[$cookie]);
    }
```


NSDOCID: <WO_____0133381A1_IA>

###skip_the_download_status.cgi

```
#!/usr/bin/perl

use lib ($ENV{PERL_XDRIVE_LIB});

use CGI qw(header redirect);
use XDrive::CGI;
use XDrive::Client::Actions;
use XDrive::Client::Security;
use XDrive::DatabaseO;
use XDrive::DatabaseO::Table::SkipDownload;
use XDrive::Template;
use XDrive::Error;
use XDrive::Library;
use Token;

use strict;

use constant TEMP_DIR => XDSTDTempDirectory();

&main;
exit(0);


sub main
{
    ## get parameters
    my $nFileSize;
    my $sTempFile;
    my $sFileName;
    my $sError;
    my $nStatus;
    my $bDone;
    my $percent = 0;
    my $nDownloadedSize = 0;
    my $sURL;
    my $nNow;

    my $oCGI = new CGI();
    my $nSeq = $oCGI->param('seq');
    my $nStart = $oCGI->param('start');
    my $sPartnerCode = $oCGI->param('STDPARTNER');
    my $sLanguageCode = $oCGI->param('LANG');
    my $sAltURL = $oCGI->param('ALTURL');
    my $previous_percent = $oCGI->param('pp');

    ## SET THE CONNECTION_COUNT = 0 IF IT ISN'T PASSED IN
    my $connection_count = ($oCGI->param('cc')) ? $oCGI->param('cc') : 0;

    my $oErr = new XDrive::Error;

    ## get the token and the action object
    my $oDBO = new XDrive::DatabaseO;
    my $oToken = xd_security_check($oDBO,$oCGI,$oErr);
    my $oAction = new XDrive::Client::Actions($oToken,$oCGI);

    my $sPartnerParams =
"STDPARTNER=$sPartnerCode&LANG=$sLanguageCode&ALTURL=$sAltURL";

    if ($oErr->Occurud)
```


SDOCID: <WO_____0133381A1_IA>

```
  {
    print redirect("/cgi-bin/skip_the_download.cgi?$sPartnerParams");
    return;
  }

  ## if the sequence number was passed then get infomation from the
database.
  if (defined $nSeq)
  {
    ## load the information from the datbase
    my $oSkip = XDrive::DatabaseO::Table::SkipDownload->new(undef, $oDBO);
    $oSkip->loadWhere('SEQ',$nSeq);
    $nFileSize = $oSkip->fetchColumn('FILE_SIZE_BYTES');
    $sTempFile = $oSkip->fetchColumn('FILENAME_FOR_TEMP_FILE');
    $sFileName = $oSkip->fetchColumn('FILE_NAME');
    $nStatus   = $oSkip->fetchColumn('IS_ACTIVE');
    $sError    = $oSkip->fetchColumn('ERROR_CODE');
    $sURL      = $oSkip->fetchColumn('FILE_URL');
    $bDone     = $oSkip->fetchColumn('IS_DONE');
  }

  ## XDRIVE.SKIP_THE_DOWNLOAD.IS_ACTIVE lengend
  ##   0 - still in queue
  ##   1 - being downloaded
  ##   2 - on hold


  ## IF CONNECTION_COUTN > 9, THEN GO TO THE FILE NOT FOUND (1220) ERROR
  ## DISPLAY, BUT KEEP TRYING TO DOWNLOAD THE FILE
  if ($connection_count >9) {
    $sError=1220;
  }

  ## IF AN ERROR OCCURRED THEN DISPLAY IT
  ## AND THEN EXIT(0);
  if (defined $sError)
  {
    if ($sError == 1240)
    {
        &DisplayQuotaError('',
                           $sURL,
                           $sFileName,
                           $sAltURL,
                           $sPartnerCode,
                           $sLanguageCode
                           );
    }
    else
    {
        my $oErr = new XDrive::Error;
        $oErr->AddErrorByErrorCode($sError);
        &DisplayError($oErr->Message(),
                      $sURL,
                      $sFileName,
                      $sAltURL,
                      $sPartnerCode,
                      $sLanguageCode
                      );
    }
  }

  ## IF THERE IS NO ERROR, THEN GATHER STATUS
  ## AND DISPLAY TO THE USER
```

```
  else
  {


    ## Get file size, later change to get from a tmp file
    my $sPath = TEMP_DIR."/$sTempFile";


    ## IF STATUS IS LISTED AS DONE IN THE DB,
    ## THEN SHOW THE DONE PAGE
    if ($bDone == 1)
    {
        &DisplayDone('',
                  $sURL,
                  $sFileName,
                  $sAltURL,
                  $sPartnerCode,
                  $sLanguageCode
                  );
    }

    ## ELSE FILE IS NOT DONE,
    ## GATHER MORE DATA AND DISPLAY TO USER
    else
    {


        ## IF STATUS IS NOT ACTIVE, OR THE FILE DOESN'T EXIST
        ## THEN DISPLAY THE CONTACTING SERVER PAGE
        ## REMOVED: || ! -e $sPath
        ## FROM CHECK
        if (  ($nStatus == 0 || -e $sPath)
              &&(!($previous_percent >= 0))
             )
        {

    &DisplayContactServer($nSeq,$sURL,$sFileName,$sAltURL,$sPartnerCode,$sL
anguageCode,$sPartnerParams,$connection_count);
        }

        ## ELSE, GATHER STATUS DATA
        ## AND DISPLAY TO USER
        else
        {

          ## Set the start time in seconds since the epoch if not passed
          ## as parameter
          if (! defined $nStart || $nStart !~ /^\d+$/)
          {
              $nStart = time();
          }


          ## IF NO FILE SIZE HAS BEEN SET IN THE DB
          ## DISPLAY ZERO PERCENTAGES TO THE USER
          if (! defined $nFileSize || $nFileSize == 0)
          {
              $nFileSize = '0';
              $percent   = '0';
              &DisplayStatus($nSeq,$percent,$sFileName,$nFileSize,'',
                        $nStart,'','',

$sAltURL,$sPartnerCode,$sLanguageCode,$sPartnerParams);
```

```
            }

            ## ELSE
            ## * THERE WAS NO ERROR
            ## * THE FILE WAS NOT DONE
            ## * THE FILE EXISTS IN THE TEMPORARY DIRECTORY
            ## * THE DB HAS AN EXPECTED FILE SIZE
            ## SO READ THE FILE, CALCULATE DATA, AND DISPLAY TO USER
            else
            {


                ## These checks are performed before inserting the skip
information
                ## into the database, but we will do it again here to be
safe.

#     my $sError = $oErr->ReturnMessageGivenCode(141);
#     XDErrorToBrowser("",$sError,undef,$oToken);
                ##die "Cannot check $sPath" if $sPath =~ /\.\./;
                ##die "Cannot check $sPath" if $sPath =~ /\/\//;

                ## Get the size of the download object
                my @file_info = stat($sPath);

                ## Conver the downloaded file size into KB
                if ($file_info[7] > 0)
                {
                  $nDownloadedSize = $file_info[7];

                  if ($nFileSize > 0)
                        {
                        $percent = 100 * $nDownloadedSize/$nFileSize;
                        }
                  if ($percent < 0)
                        {
                        $percent = 0;
                        }
                  $percent = sprintf("%.2f",$percent);
                }

                ## IF THE FILE IS GONE NOW, OR SOMEOTHER CONDITION, THE USER
                ## WILL NEVER SEE THE %DONE DROP
                ## USE WHICH EVER IS LARGER, THE PRECENT THAT WE JUST
DISPLAYED
                ## OF THE ONE THAT WE JUST READ FROM THE FILE SYSTEM
                $percent = ($previous_percent > $percent) ? $previous_percent
: $percent;

                ## We have already transfered some of the file, so we can now
                ## estimate the download time.
                $nNow = time();

                my $sInfo;
                my $nElapsedSec  = $nNow - $nStart;
                my $nTransPerSec = 0;

                if ($nElapsedSec)
                {
                  $nTransPerSec = $file_info[7]/$nElapsedSec;
                }

                if ($nTransPerSec > 0)
```

```
                    {
                      my $partial  = $percent/100;
                      my ($nSecsRemain, $nMin, $nSecs, $nTransPerSecMB);

                      if ($partial == 0) {
                          $sInfo = '';
                      } else {
                          $nSecsRemain  = ($nElapsedSec/$partial)-$nElapsedSec;
                          $nMin = int($nSecsRemain/60);
                          $nSecs = $nSecsRemain % 60;
                          $nTransPerSecMB = $nTransPerSec/1024;

                      }


                      $sInfo = sprintf(", %d:%02d remaining (%.2f
 KB/sec)",$nMin,$nSecs
                                       ,$nTransPerSecMB);
                    }

                    my $nTrans;

                    my $k = "KB";
                    my $nDiv = 1024;
                    my $nTempSize = $file_info[7] || 0;

                    if ($nFileSize > 1024*1024)
                    {
                      $k = "MB";
                      $nDiv = 1024*1024;
                    }

                    if ($nFileSize < 0)
                      {
                      $nFileSize = 0;
                      }

                    $nFileSize = sprintf("%.2f",$nFileSize/$nDiv);
                    $nTrans = sprintf("%.2f",$nTempSize/$nDiv);

                    &DisplayStatus($nSeq,$percent,$sFileName,$nFileSize,'',
                              $nStart,$sInfo,$k,
 $sAltURL,$sPartnerCode,$sLanguageCode,$sPartnerParams);

                ## END OF READING DATA FROM SYSTEM AND
                ## DISPLAYING TO USER
                }

              ## END OF NO EXPECTED SIZE IN DB
              ## SHOW USER ZERO PERCENTAGES
              }

          ## END OF FILE MUST BE DONE
          ## SO SHOW A DONE
          }

      ## END OF NO ERROR
      }

      $oDBO->disconnect;
}
```

```
sub DisplayContactServer
{
    my
($nSeq,$sURL,$sFileName,$sAltURL,$sPartnerCode,$sLanguageCode,$sPartnerParams
,$connection_count) = @_;

    my ($sHostname) = $sURL =~ /\/\/([^\/]+)\//;
    $connection_count++;

    ## load the status page
    my $template = new XDrive::Template
      ({
          'partner_code' => $sPartnerCode,
          'language' => $sLanguageCode,
          'file' => 'skip_the_download_contacting.thtml',
          'tags' =>
          {
            'hostname' => $sHostname,
            'continue_to' => "/cgi-
bin/skip_the_download_status.cgi?seq=$nSeq&cc=$connection_count&$sPartnerPara
ms",
            'fileName' => $sFileName,
            'altURL' => $sAltURL,
            }
      });
    print "Content-type: text/html\n\n";
    print $template->get;
}


sub DisplayStatus
{
    my $nSeq = shift;
    my $percent = shift;
    my $filename = shift;
    my $filesize = shift;
    my $transferred = shift;
    my $start = shift;
    my $info = shift;
    my $k = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;
    my $sPartnerParams = shift;

    my $percent_disp;

    if ($filesize <= 0)
    {
      $filesize = 'Unknown';
      $k = ' ';
      $percent_disp = 'Unknown';
      $percent = 0;
    }
    else
    {
      $percent_disp = "$percent%";
    }

    ## load the status page
    my $template = new XDrive::Template
      ({
```

```
            'partner_code' => $sPartnerCode,
            'language' => $sLanguageCode,
            'file' => 'skip_the_download_status.thtml',
            'tags' =>
            {
              'PERCENT_DISP' => $percent_disp,
              'PERCENT' => $percent,
              'FILE_NAME' => $filename,
              'FILE_SIZE' => $filesize,
              'TRANSFERRED' => $transferred,
              'TRANSINFO' => $info,
              'K' => $k,
              'URL' => "/cgi-
bin/skip_the_download_status.cgi?seq=$nSeq&start=$start&pp=$percent&$sPartner
Params",
              'altURL' => $sAltURL
              }
      });

    $template->clear;
    print "Content-type: text/html\n\n";
    print $template->get;
}


sub DisplayDone
{
    my $sMessage = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;

    &ErrorOut('skip_the_download_complete.thtml',
            $sFileURL,
            $sFileName,
            $sAltURL,
            $sPartnerCode,
            $sLanguageCode,
            $sMessage
            );

}


sub DisplayError
{
    my $sError = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;

    my $thtml = ($sAltURL != '')? 'skip_the_download_no_alt_error.thtml'
                                : 'skip_the_download_error.thtml';

    &ErrorOut($thtml,
            $sFileURL,
            $sFileName,
            $sAltURL,
            $sPartnerCode,
```

```
            $sLanguageCode,
            $sError
            );

}


sub DisplayQuotaError
{
    my $sError = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;

    &ErrorOut('skip_the_download_quota_error.thtml',
            $sFileURL,
            $sFileName,
            $sAltURL,
            $sPartnerCode,
            $sLanguageCode,
            $sError
            );

}


sub ErrorOut ()
{
    my $sTHTMLFILE = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;
    my $sMessage = shift;

            my $template = new XDrive::Template
                ({
            'language' => $sLanguageCode,
                'partner_code' => $sPartnerCode,
                'file' => $sTHTMLFILE,
                'tags' =>
            {
                'message' => $sMessage,
                'altURL' => $sAltURL,
                'fileURL' => $sFileURL,
                'FILE_NAME' => $sFileName,
                'LANG' => $sLanguageCode,
                'ALTURL' => $sAltURL,
                'STDPARTNER' => $sPartnerCode,
            }
          });

   my $html = $template->get;

   print "Content-type: text/html\n\n";
   print $html;
```


3NSDOCID: <WO_____0133381A1_IA>

```
            $sLanguageCode,
            $sError
            );

}


sub DisplayQuotaError
{
    my $sError = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;

    &ErrorOut('skip_the_download_quota_error.thtml',
            $sFileURL,
            $sFileName,
            $sAltURL,
            $sPartnerCode,
            $sLanguageCode,
            $sError
            );

}


sub ErrorOut ()
{
    my $sTHTMLFILE = shift;
    my $sFileURL = shift;
    my $sFileName = shift;
    my $sAltURL = shift;
    my $sPartnerCode = shift;
    my $sLanguageCode = shift;
    my $sMessage = shift;

            my $template = new XDrive::Template
                ({
            'language' => $sLanguageCode,
                'partner_code' => $sPartnerCode,
                'file' => $sTHTMLFILE,
                'tags' =>
            {
                'message' => $sMessage,
                'altURL' => $sAltURL,
                'fileURL' => $sFileURL,
                'FILE_NAME' => $sFileName,
                'LANG' => $sLanguageCode,
                'ALTURL' => $sAltURL,
                'STDPARTNER' => $sPartnerCode,
            }
          });

    my $html = $template->get;

    print "Content-type: text/html\n\n";
    print $html;
```

```
        my $sUser_name = $oUserInfo->fetchColumn('NAME_FIRST') . " " .
$oUserInfo->fetchColumn('NAME_LAST');
        my $sUser_email = $oUserInfo->fetchColumn('EMAIL_ADDRESS');
        $oUserInfo->finish();
          $oUserInfo->disconnect();

        if ($sAddress)
              {
              &send_mail($sName, $sAddress, $sUser_name, $sUser_email,
$nUser_ID, $oCGI, $oToken, $oErr, $oCookie);
              &display_thank_you($oCGI,$oCookie);
              }
        else
              {
              &display_form($oCGI,$oCookie);
              }
        }


sub send_mail {
        my ($sName, $sAddress, $sUser_name, $sUser_email, $nUser_ID, $oCGI,
$oToken, $oErr, $oCookie) = @_;

        ## send out email for each friend only if form is filled out
        ## get number of friend fields

        my $numFriends = $oCGI->param("numFriends");
        for (my $i=1; $i<=$numFriends; $i++)
              {
              $sAddress = $oCGI->param('friends_email' . $i);
              $sName = $oCGI->param('friends_name' . $i);
              my $sMessage = &get_message($sUser_name, $nUser_ID, $sName,
$sUser_name,$oCookie);

              ##only send the mail if the email address is filled out
              if ($sAddress)
              {
                  my %toXdrive =
                  (
                  To      => "$sName <$sAddress>",
                  Bcc     => '',
                  From    => "$sUser_email",
                  Message => $sMessage,
                  Subject => "Check out X:drive!",
                  );

                  unless (sendmail %toXdrive)
                  {
                  warn "## Mail error ".$Mail::Sendmail::error;
                  if ($Mail::Sendmail::error =~ /451/)
                        {
                    my $sError = $oErr->ReturnMessageGivenCode(1310);
                        XDErrorToBrowser("",$sError,undef,$oToken);
                        }
            else
                  {
                      my $sError = $oErr->ReturnMessageGivenCode(1311);

XDErrorToBrowser('tell_a_friend__error.thtml',$sError,undef,$oToken);
                  }
                  exit(1);
                }
            }
```

```
    }


}


sub get_formfield {
    my ($sNum,$oCookie) = @_;

    my $oFormField = new XDrive::Template
      ({
      'language'     => $oCookie->getElement('language'),
      'partner_code' => $oCookie->getElement('partner'),
      });
    $oFormField->load('tell_form_fields.thtml');

    $oFormField->tags
        ({
        'number' => $sNum
        });

    return $oFormField->get;
}


sub get_message {
    my ($sUser_name, $nUser_ID, $sName, $sUserEmail,$oCookie) = @_;

    my $oMessage = new XDrive::Template
      ({
      'language'     => $oCookie->getElement('language'),
      'partner_code' => $oCookie->getElement('partner'),
      });
    $oMessage->load('tell_a_friend__message.thtml');

    $oMessage->tags
        ({
        'user_name' => $sUser_name,
        'nUser_ID' => $nUser_ID,
        'user_email' => $sUserEmail,
        'friend_name' => $sName
        });

    return $oMessage->get;
}

sub display_form {
    my $oCGI = shift;
    my $oCookie = shift;
    my $oForm = new XDrive::Template
      ({
      'language'     => $oCookie->getElement('language'),
      'partner_code' => $oCookie->getElement('partner'),
      });
    $oForm->load('tell_a_friend.thtml');
    my $numFriends = $oCGI->param("numFriends");

    ##construct the html for multiple input fields
    my $inputFields='';

    for (my $i=1; $i<=$numFriends ; $i++)
    {
      $inputFields = $inputFields . &get_formfield($i,$oCookie);
```

```
    }

    $oForm->tags
        ({
      'friendsToTell' => $inputFields,
      'numFriends' => $numFriends,
        });
    print $oCGI->header, $oForm->get;
    exit(0);
}

sub display_thank_you {
    my $oCGI = shift;
    my $oCookie = shift;
    my $oForm = new XDrive::Template
      ({
      'language'     => $oCookie->getElement('language'),
      'partner_code' => $oCookie->getElement('partner'),
      });
    $oForm->load('tell_a_friend__t_y.thtml');
    print $oCGI->header, $oForm->get;
    exit(0);
}
```

###web_unauthorized.cgi

```
#!/usr/bin/perl
# Written by Martin Hald <mhald@uci.edu> on Sat Feb 13, 1999
#
# Program for showing unauthorized information and allowing the users to
# re-login and possibly showing them a "forgot your password?" link.

use strict;
use lib ($ENV{PERL_XDRIVE_LIB});

use CGI qw(header param);
use CGI::Carp qw(fatalsToBrowser);
# use XDrive::CGI qw(:MAIN);
use XDrive::Client::Registration;
use XDrive::Template;
use XDrive::Error;

exit &main;

sub main
      {
      my $oCGI = CGI->new();

      my $oLayout = new XDrive::Template;
      my $oContent = new XDrive::Template;
      my $oNavigation = new XDrive::Template;

      $oLayout->partner('xdrv');
      $oContent->partner('xdrv');
      $oNavigation->partner('xdrv');

      $oLayout->load('layout.thtml');
      $oNavigation->load('front_nav.thtml');

      ## Get the error key
      my $sError = $oCGI->param('error');

      ##now get the error message associated with that-error
      my $oErr = new XDrive::Error;
      my $message = $oErr->ReturnMessageGivenCode($sError);

      ## Load the required template HTML files.
      my $oForm = new XDrive::Template;
      $oForm->partner('xdrv');
      $oForm->load("front_nav.thtml");
      $oContent->load("unauthorized.thtml");

      ## Update the layout
      $oLayout->tags
            ({
            'header_graphic' => 'header_denied.gif'
            });

      ## Update the content
      $oContent->tags
            ({
            'error_message' => $message
            });
      $oContent->clear();
```


NSDOCID: <WO_____0133381A1_IA>

```
    ## Print out the HTML and exit
    $oLayout->tags
          ({
          'content' => $oContent->get,
          'navigation' => $oNavigation->get,
          'title' => 'Authorization Denied'
          });
    print header(), $oLayout->get;

    return 0;
}
```

Windows Client Code

// Module: dlgShareAFile.h 1
// Module: dlgShareAFile.h 3
// Module: xdBase64.cpp 5
// Module: xdBase64.h 9
// Module: xdGlobals.h 10
// Module: xdParseDate.h 13
// Module: xdRegistry.h 14
// Module: xdTokens.h 16
// Module: xdTools.h 17
// Module: xdEngine.h 20
// Module: tdimsgtbl.h 22
// Module: tdisock.h 24
// Module: xdFileIO.cpp 41
// Module: xdDebugger.cpp 45

```
//
// Module: dlgShareAFile.h
// Subsystem: KnoWare Internet Engine (kwEngine.dll)
// Contents: Declaration module for the dlgShareAFile class.
//
// ----------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ----------------------------------------------------------------------
// ----------------------------------------------------------------------
//

#include "stdafx.h"
#include <xdGlobals.h>

#ifndef _VXD_SOURCE_
#include "resource.h"
#endif
#include "dlgShareAFile.h"

#ifdef _DEBUG
#undef THIS_FILE
static char THIS_FILE[] = __FILE__;
#endif

// ----------------------------------------------------------------------
// Implementation
// ----------------------------------------------------------------------
BEGIN_MESSAGE_MAP(dlgShareAFile, CDialog)
        //{{AFX_MSG_MAP(dlgShareAFile)
        //}}AFX_MSG_MAP
END_MESSAGE_MAP()

// ----------------------------------------------------------------------
// Method: dlgShareAFile()
// Purpose: Standard constructor
//
dlgShareAFile::dlgShareAFile(CWnd* pParent /*=NULL*/)
        : CDialog(dlgShareAFile::IDD, pParent)
{
        //{{AFX_DATA_INIT(dlgShareAFile)
        m_sFileName = szEMPTY;
        m_sFileDescription = szEMPTY;
        m_sEmailMessage = szEMPTY;
        m_sEmailSubject = szEMPTY;
        m_sEmail0 = szEMPTY;
        m_sEmail1 = szEMPTY;
        m_sEmail2 = szEMPTY;
        m_sEmail3 = szEMPTY;
        m_sEmail4 = szEMPTY;
        //}}AFX_DATA_INIT
} // End of dlgShareAFile()

// ----------------------------------------------------------------------
// Method: DoDataExchange()
// Purpose: Standard data exchange handler
//
void dlgShareAFile::DoDataExchange(CDataExchange* pDX)
{
```

```
        CDialog::DoDataExchange(pDX);
        //{{AFX_DATA_MAP(dlgShareAFile)
        DDX_Text(pDX, IDC_SHARE_FILENAME, m_sFileName);
        DDX_Text(pDX, IDC_SHARE_FILEDESC, m_sFileDescription);
        DDX_Text(pDX, IDC_SHARE_EMAILMSG, m_sEmailMessage);
        DDX_Text(pDX, IDC_SHARE_EMAILSUB, m_sEmailSubject);
        DDX_Text(pDX, IDC_SHARE_EMAIL1, m_sEmail0);
        DDX_Text(pDX, IDC_SHARE_EMAIL2, m_sEmail1);
        DDX_Text(pDX, IDC_SHARE_EMAIL3, m_sEmail2);
        DDX_Text(pDX, IDC_SHARE_EMAIL4, m_sEmail3);
        DDX_Text(pDX, IDC_SHARE_EMAIL5, m_sEmail4);
        //}}AFX_DATA_MAP
} // End of DoDataExchange()

// ------------------------------------------------------------------
// Method: OnInitDialog()
// Purpose: Called to initialize the contents of the dialog
//
BOOL dlgShareAFile::OnInitDialog()
{
        CDialog::OnInitDialog();

        UpdateData(FALSE);
        return TRUE;  // return TRUE unless you set the focus to a control
                // EXCEPTION: OCX Property Pages should return FALSE
} // End of OnInitDialog()

// ------------------------------------------------------------------
// Method: OnOK()
// Purpose: Called to close out the dialog.
//
void dlgShareAFile::OnOK()
{
        UpdateData(TRUE);
        CDialog::OnOK();
} // End of OnOK()
```


NSDOCID: <WO 0133381A1 IA>

```
//
// Module: dlgShareAFile.h
// Subsystem: KnoWare Internet Engine (kwEngine.dll)
// Contents: Declaration module for the dlgShareAFile class.
//
// ----------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ----------------------------------------------------------------------
// ----------------------------------------------------------------------
//
#if !defined(_INC_DLGSHAREAFILE_H_)
#define _INC_DLGSHAREAFILE_H_

#if _MSC_VER > 1000
#pragma once
#endif // _MSC_VER > 1000

#ifndef _VXD_SOURCE_
#include "resource.h"
#endif

#ifndef _VXD_SOURCE_

// ----------------------------------------------------------------------
//      dlgShareAFile dialog class
//
class dlgShareAFile : public CDialog
{
public:
        dlgShareAFile(CWnd* pParent = NULL);  // standard constructor

        //{{AFX_DATA(dlgShareAFile)
        enum { IDD = IDD_SHARE };
        CString m_sFileName;
        CString m_sFileDescription;
        CString m_sEmailMessage;
        CString m_sEmailSubject;
        CString m_sEmail0;
        CString m_sEmail1;
        CString m_sEmail2;
        CString m_sEmail3;
        CString m_sEmail4;
        //}}AFX_DATA

        //{{AFX_VIRTUAL(dlgShareAFile)
        protected:
        virtual void DoDataExchange(CDataExchange* pDX);  // DDX/DDV support
        //}}AFX_VIRTUAL

protected:
        //{{AFX_MSG(dlgShareAFile)
        virtual BOOL OnInitDialog();
        virtual void OnOK();
        //}}AFX_MSG
        DECLARE_MESSAGE_MAP()
};

//{{AFX_INSERT_LOCATION}}
```

```
// Microsoft Visual C++ will insert additional declarations immediately before the previous line.

#endif

#endif // !defined(_INC_DLGSHAREAFILE_H_)
```

```
//
// Module: xdBase64.cpp
// Subsystem: X:drive Client Engine (xdEngine.dll)
// Contents: Implementation module for the xdBase64 class
//
// ------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ------------------------------------------------------------------
// ------------------------------------------------------------------
//
#include "stdafx.h"
#include "xdBase64.h"

#ifdef _DEBUG
#undef THIS_FILE
static char THIS_FILE[]=__FILE__;
#endif
#ifdef _VXD_SOURCE_
#include <xdEngine.h>
#define TRACE  DEBUG_DPRINTF
#endif

// Static Member Initializers
//

// The 7-bit alphabet used to encode binary information
CString xdBase64::m_sBase64Alphabet =
_T( "ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789+/" );

int xdBase64::m_nMask[] = { 0, 1, 3, 7, 15, 31, 63, 127, 255 };

// ------------------------------------------------------------------
// Method: xdBase64()
// Purpose: Standard Constructor
//
xdBase64::xdBase64 ( void )
{
} // End of xdBase64()

// ------------------------------------------------------------------
// Method: ~xdBase64()
// Purpose: Standard destructor
//
xdBase64::~xdBase64()
{
} // End of ~xdBase64()

// ------------------------------------------------------------------
// Method: Encode()
// Purpose: Encodes a string
//
CString xdBase64::Encode(LPCTSTR szEncoding, int nSize)
{
        CString sOutput = _T( "" );
        int nNumBits = 6;
        UINT nDigit;
        int lp = 0;
```

```
        ASSERT( szEncoding != NULL );
        if( szEncoding == NULL )
                return sOutput;
        m_szInput = szEncoding;
        m_nInputSize = nSize;

        m_nBitsRemaining = 0;
        nDigit = read_bits( nNumBits, &nNumBits, lp );
        while( nNumBits > 0 )
        {
                sOutput += m_sBase64Alphabet[ (int)nDigit ];
                nDigit = read_bits( nNumBits, &nNumBits, lp );
        }
        // Pad with '=' as per RFC 1521
        while( sOutput.GetLength() % 4 != 0 )
        {
                sOutput += '=';
        }
        return sOutput;
} // End of Encode()

// ----------------------------------------------------------------------
// Method: Decode()
// Purpose: Decodes data
// Notes: The size of the output buffer must not be less than 3/4 the
//                      size of the input buffer. For simplicity, make them the same
//                      size.
//
int xdBase64::Decode(LPCTSTR szDecoding, LPTSTR szOutput)
{
        CString sInput;
  int c, lp =0;
        int nDigit;
  CString       strDecode;
        int* pDecode = (int*)strDecode.GetBuffer(256*sizeof(int));

        ASSERT( szDecoding != NULL );
        ASSERT( szOutput != NULL );
        if( szOutput == NULL )
                return 0;
        if( szDecoding == NULL )
                return 0;
        sInput = szDecoding;
        if( sInput.GetLength() == 0 )
                return 0;

        // Build Decode Table
        //
        for( int i = 0; i < 256; i++ )
                pDecode[i] = -2; // Illegal digit
        for( i=0; i < 64; i++ )
        {
                pDecode[ m_sBase64Alphabet[ i ] ] = i;
                pDecode[ m_sBase64Alphabet[ i ] | 0x80 ] = i; // Ignore 8th bit
                pDecode[ '=' ] = -1;
                pDecode[ '=' | 0x80 ] = -1; // Ignore MIME padding char
  }

        // Clear the output buffer
        memset( szOutput, 0, sInput.GetLength() + 1 );

        // Decode the Input
```

```
        //
        for( lp = 0, i = 0; lp < sInput.GetLength(); lp++ )
        {
                c = sInput[ lp ];
                nDigit = pDecode[ c & 0x7F ];
                if( nDigit < -1 )
                {
                        return 0;
                }
                else if( nDigit >= 0 )
                        // i (index into output) is incremented by write_bits()
                        write_bits( nDigit & 0x3F, 6, szOutput, i );
    }
        return i;
} // End of Decode()

// ----------------------------------------------------------------
// Method: read_bits()
// Purpose: dunno
//
UINT xdBase64::read_bits(int nNumBits, int * pBitsRead, int& lp)
{
  ULONG lScratch;
  while( ( m_nBitsRemaining < nNumBits ) &&
                ( lp < m_nInputSize ) )
        {
                int c = m_szInput[ lp++ ];
    m_lBitStorage <<= 8;
    m_lBitStorage |= (c & 0xff);
                m_nBitsRemaining += 8;
  }
  if( m_nBitsRemaining < nNumBits )
        {
                lScratch = m_lBitStorage << ( nNumBits - m_nBitsRemaining );
                *pBitsRead = m_nBitsRemaining;
                m_nBitsRemaining = 0;
  }
        else
        {
                lScratch = m_lBitStorage >> ( m_nBitsRemaining - nNumBits );
                *pBitsRead = nNumBits;
                m_nBitsRemaining -= nNumBits;
  }
  return (UINT)lScratch & m_nMask[nNumBits];
} // End of read_bits()

// ----------------------------------------------------------------
// Method: write_bits()
// Purpose: dunno
//
void xdBase64::write_bits ( UINT nBits, int nNumBits, LPTSTR szOutput, int& i )
{
        UINT nScratch;

        m_lBitStorage = (m_lBitStorage << nNumBits) | nBits;
        m_nBitsRemaining += nNumBits;
        while( m_nBitsRemaining > 7 )
        {
                nScratch = m_lBitStorage >> (m_nBitsRemaining - 8);
                szOutput[ i++ ] = (TCHAR)(nScratch & 0xFF);
                m_nBitsRemaining -= 8;
        }
```

```
} // End of write_bits()
```

```
//
// Module: xdBase64.h
// Subsystem: X:drive Client Engine (xdEngine.dll)
// Contents: Declaration module for the xdBase64 class.
//
// ------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ------------------------------------------------------------------
// ------------------------------------------------------------------
//
#if !defined(_INC_XDBASE64_H_)
#define _INC_XDBASE64_H_

#ifdef _VXD_SOURCE_
        #include <xdCString.h>
#endif

#if _MSC_VER >= 1000
#pragma once
#endif // _MSC_VER >= 1000

// ------------------------------------------------------------------
// xdBase64 encoder class
//
class xdBase64
{
public:
        xdBase64 ( void );
        virtual ~xdBase64 ( void );

        virtual int             Decode ( LPCTSTR szDecoding, LPTSTR szOutput );
        virtual CString Encode ( LPCTSTR szEncoding, int nSize );

protected:
        void            write_bits ( UINT nBits, int nNumBts, LPTSTR szOutput, int& lp );
        UINT            read_bits ( int nNumBits, int* pBitsRead, int& lp );

protected:
        int                     m_nInputSize;
        int                     m_nBitsRemaining;
        ULONG           m_lBitStorage;
        LPCTSTR         m_szInput;
        static int m_nMask[];
        static CString  m_sBase64Alphabet;
};

#endif // !defined(_INC_XDBASE64_H_)
```

/

```
// Module: xdGlobals.h
// Subsystem: X:drive
// Contents: Global definitions used throughout the system
//
// ----------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ----------------------------------------------------------------------
// ----------------------------------------------------------------------
//
#ifndef _INC_XDGLOBALS_H_
#define _INC_XDGLOBALS_H_

#ifdef _VXD_SOURCE_

        //
        // This HodgePodge helps us to be able to compile all of our code
        // under Ring-3 and Ring-0 without too much modification.
        //
        #ifndef USE_NDIS
                #define USE_NDIS
        #endif

        #include <vtoolscp.h>                   // VToolsD main header file

        #ifndef LPCTSTR
                typedef char                    TCHAR;
                typedef unsigned char   _TUCHAR;
                typedef const TCHAR*    LPCTSTR;
                typedef TCHAR*                  LPTSTR;
                typedef unsigned char   BYTE;
                typedef BYTE*                   LPBYTE;
                typedef DSKTLSYSTEMTIME SYSTEMTIME;
                typedef HANDLE                          HINSTANCE;
                #define _T(x)                   (x)
        #endif

        #ifndef BASED_CODE
                #define BASED_CODE
        #endif

        #ifndef INVALID_HANDLE_VALUE
                #define INVALID_HANDLE_VALUE (HANDLE)-1
        #endif

        #define _tcsstr         strstr          // Standard unicode mappings
        #define _tcslen         strlen
        #define _tcscpy         strcpy
        #define _tcsrchr  strrchr
        #define _tcscat         strcat
        #define _ttoi           atoi
        #define _ttol           atol
        #define _tcsrev         strrev
        #define _tcschr         strchr
        #define _tcsncpy strncpy
        #define _tcspbrk strpbrk
        #define _stprintf sprintf
        #define _tcslwr         strlwr
```


3NSDOCID: <WO 0133381A1 IA>

```
        #define _tcsupr         strupr
        #define _tcsicmp        stricmp
        #define _tcscmp         strcmp
        #define _tcscoll   strcmp
        #define _istdigit  isdigit
//      #define ASSERT Assert
        typedef HANDLE          HWND;
#endif

// ------------------------------------------------------------
// Setup a whole bunch of constants that we can use throughout the systems
//
#define  chNL                   _T('\n')
#define chCOMMA                 _T(',')
#define chDOSSLASH              _T('\\')
#define chUNIXSLASH             _T('/')
#define chQUOTE                 _T('\'')
#define chDQUOTE                _T('\"')
#define chPERIOD                _T('.')
#define chBAR                   _T('|')
#define chTAB                   _T('\t')
#define chCR                    _T('\r')
#define chSPACE                 _T(' ')
#define chCOLON                 _T(':')
#define chSEMICOLON             _T(';')
#define chDASH                  _T('-')
#define chPLUS                  _T('+')
#define chPERCENT               _T('%')
#define chOPENBRACKET           _T('[')
#define chCLOSEBRACKET          _T(']')
#define chNUL                   _T('\0')
#define chZERO                  _T('0')
#define chONE                   _T('1')
#define chTWO                   _T('2')
#define chTHREE                 _T('3')
#define chFOUR                  _T('4')
#define chFIVE                  _T('5')
#define chSIX                   _T('6')
#define chSEVEN                 _T('7')
#define chEIGHT                 _T('8')
#define chNINE                  _T('9')
#define chOPENPAREN             _T('(')
#define chCLOSEPAREN _T(')')
#define chAT                    _T('@')

#define szNL                    _T("\n")
#define szCOMMA                 _T(",")
#define szDOSSLASH              _T("\\")
#define szUNIXSLASH             _T("/")
#define szQUOTE                 _T("'")
#define szDQUOTE                _T("\"")
#define szPERIOD                _T(".")
#define szBAR                   _T("|")
#define szTAB                   _T("\t")
#define szCR                    _T("\r")
#define szSPACE                 _T(" ")
#define szCOLON                 _T(":")
#define szSEMICOLON             _T(";")
#define szDASH                  _T("-")
#define szPLUS                  _T("+")
#define szOPENBRACKET           _T("[")
#define szCLOSEBRACKET          _T("]")
```

```
#define szAT                    _T("@")
#define szEMPTY                 _T("")
#define szCURRENTDIR _T(".")
#define szPARENTDIR             _T("..")
#define szFTP_DOT               _T("ftp.")
#define szFTP_SLASH             _T("ftp://")
#define szOPENPAREN             _T("(")
#define szCLOSEPAREN _T(")")

#define  XD_CACHE_BASEDIR  _T("xdcache")
#define XD_LOGFILE_NP           _T("xdrive.log")
#define XD_LOGFILE_VXD          _T("xdrivevxd.log")

// ------------------------------------------------------------------
// We need to define the scope of values which will be used in the system.
// They are defined here since we need to read/write these to the registry.
//

//
// General defines
//
#define XD_LEN_32                       32
#define XD_LEN_64                       64
#define XD_LEN_128                      128
#define  XD_LEN_256                     256
#define XD_LEN_512                      512
#define XD_LEN_1024                     1024
#define XD_LEN_2048                     2048

//
// these program IDs are also the 1st two digits of the registration number
//
#define XD_PROGID_XDRIVE 0x53       // {DB2112AD-0000-0000-0053-000004281965}


//
// IN will generate a directory listing and the local file that contains
// that information will have an extension of `.fnd`. For example, if
// IN/FND does a directory listing of ftp.microsoft.com/softlib/mslfiles,
// it will place the raw directory listing in the in the local IN cache
// directory (which is currently defined as hanging off of the same
// directory where IN is located) as
//
// c:\xdCache\ftp.microsoft.com\root.softlib.mslfiles.ls
//
// and the parsed FND formatted data will be placed into
//
// c:\xdCache\ftp.microsoft.com\root.softlib.mslfiles.fnd
//
// the .fnd file is parsed out to produce the information returned as a
// result of the FINDFIRST()/FINDNEXT() calls to the NP.
//
#define XD_FILEEXT_LS           _T(".ls")
#define  XD_FILEEXT_XDR         _T(".fnd")
//
// Here is our Network Provider Name
//
#define  XD_PROVIDER_NAME               _T("Xdrive")
#define XD_PROVIDER_NETID               0x00120000

#endif // _INC_XDGLOBALS_H_
```

```
//
// Module: xdParseDate.h
// Subsystem: X:drive Tools Library (xdTools.dll)
// Contents: Declaration module for the CParseDate utility class
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//
#ifndef _INC_XDPARSEDATE_H_
#define _INC_XDPARSEDATE_H_

#include <xdTokens.h>

class XDTOOLS_PUBLIC CParseDate
{
public:
        CParseDate ( void );
        ~CParseDate ( void );

        BOOL        Parse ( LPCTSTR s );

        int                 m_iYear;
        int                 m_iMonth;
        int                 m_iDay;
        int                 m_iHour;
        int                 m_iMinute;
        int                 m_iSecond;
        TCHAR       m_szDate[64];
        TCHAR       m_szTime[32];
        TCHAR       m_szOrig[64];

private:
        BOOL        isNUM ( LPCTSTR s );
        BOOL        isDOW ( LPCTSTR s );
        xdTokens    m_tokens;
};
#endif
```

```
//
// Module: xdRegistry.h
// Subsystem: X:drive Tools Library (xdTools.dll)
//  Contents: Declaration module for the xdRegistry utility class
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//
#ifndef _INC_XDREGISTRY_H_
#define _INC_XDREGISTRY_H_

#if _MSC_VER >= 1000
#pragma once
#endif // _MSC_VER >= 1000

#include <xdGlobals.h>              // X:drive system wide globals
#include <xdTools.h>                // X:drive Tools Related

// ---------------------------------------------------------------------
// xdRegistry
//  the registry class encapsulates the regitry functions. You must open
// at least a hive in the constructor. then you can optionally open
// a subkey & read/write information to the registry. All methods will return
// true upon successful completion. false will be returned if an error
// has occurred.
//
class XDTOOLS_PUBLIC xdRegistry
{
public:
   xdRegistry();
   ~xdRegistry();

//
// public interface
//
public:
   BOOL     RegOpenRead ( HKEY hHive, LPCTSTR szSubKey );
   BOOL     RegOpenWrite ( HKEY hHive, LPCTSTR szSubKey );
   BOOL     RegClose ( void );
        BOOL            RegDeleteKey ( HKEY hHive, LPCTSTR szSubKey );
        BOOL            RegDeleteValue ( LPCTSTR szVal );

   BOOL                 RegEnumKey ( int i, LPCTSTR szKeyName, UINT uiLenWithNull );
   BOOL                 RegEnumVal ( int i, LPCTSTR szValName, UINT uiLenWithNull, LPCTSTR
szValData, UINT uiDataLenWithNull );
        BOOL            RegEnumStr ( int i, LPCTSTR szVal, UINT uiLenWithNull );
        BOOL      RegGetStr ( LPCTSTR sName, LPCTSTR szVal, UINT uiLenWithNull );
   BOOL     RegPutStr ( LPCTSTR sName, LPCTSTR szVal );
        BOOL            RegPutBin ( LPCTSTR sName, BYTE* pBuffer, UINT uiLen );

   BOOL     RegGetNum ( LPCTSTR sName, BOOL& bVal );
   BOOL     RegGetNum ( LPCTSTR sName, WORD& wVal );
   BOOL     RegGetNum ( LPCTSTR sName, DWORD& dwVal );
   BOOL     RegGetNum ( LPCTSTR sName, UINT& uiVal );

   BOOL     RegPutNum ( LPCTSTR sName, DWORD dwVal );
```

```
        LONG            RegGetLastError ( void );

private:
   HKEY      m_hKey;       // the current open hive
   LONG            m_lRetCode;    // the last return code
}; // End of xdRegistry

#endif // _INC_XDREGISTRY_H_
```

```
//
// Module: xdTokens.h
// Subsystem: X:drive Tools Library (xdTools.dll)
// Contents: Declaration module for xdTokens utility class
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//
#ifndef _INC_XDTOKENS_H_
#define _INC_XDTOKENS_H_

#if _MSC_VER >= 1000
#pragma once
#endif // _MSC_VER >= 1000

#include <xdGlobals.h>          // X:drive system wide globals
#include <xdTools.h>            // X:drive Tools Related

#define XD_MAX_TOKENS    1024

//---------------------------------------------------------------------
// xdTokens
//      This class is a big worker class. its used to parse strings into
// tokens or substrings. Strings are parsed by supplying a string of
// characters which will be used to parse out the string.
//

class XDTOOLS_PUBLIC xdTokens
{
public:
   xdTokens(LPCTSTR pTokens = NULL);
   ~xdTokens();

//
// Public Interface
//
public:
        int             Parse(int iNumToParse, LPCTSTR pString, LPCTSTR pTokens=NULL);
        int             Parse(LPCTSTR pString, LPCTSTR pTokens=NULL);
        LPCTSTR         operator[](int iIndex);

//
// Private Members
//
private:
        LPCTSTR         *m_pTok;
        int             m_iNumParsed;
        LPTSTR          m_szWorkString;
        LPTSTR          m_szTokens;
        LPTSTR          m_pWorkString;
}; // End of xdTokens

#endif // _INC_XDTOKENS_H_
```

```
//
// Module: xdTools.h
// Subsystem: X:drive Tools Library (xdTools.dll)
// Contents: Main header file for the xdTools library
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//
#ifndef _INC_XDTOOLS_H_
#define _INC_XDTOOLS_H_

#if _MSC_VER >= 1000
#pragma once
#endif // _MSC_VER >= 1000

#include <xdGlobals.h>              // X:drive system wide globals
#ifdef _VXD_SOURCE_
#include <xdCString.h>
#endif
#pragma warning (disable : 4100)
#pragma warning (disable : 4201)

//
// The following code block will insure the proper resolution of any
// API functions (and classes) which are exposed from the XDTOOLS library.
// When compiling the XDTOOLS library source code, make sure that the
// following #define is defined in the project settings (both debug & release).
// This will cause any classes and/or API functions defined as to
// be exported to the LIB file. If you are USING the library by linking to
// the XDTOOLS.LIB or XDTOOLSD.LIB import libraries, then ignore the
// following #define's for
//
#ifdef _XDTOOLS_SOURCE_
        #define XDTOOLS_PUBLIC __declspec( dllexport )
#else
        #define XDTOOLS_PUBLIC // __declspec( dllimport )
#endif // _XDTOOLS_SOURCE_

//
// If we are debugging & we trap an exception, we will display it
// in a message box, otherwise in release mode, we wont.
//
#ifdef _DEBUG
        #define XDTRACE(x) AfxMessageBox(x)
#else
        #define XDTRACE(x) TRACE0(x)
#endif

// ---------------------------------------------------------------------
// XDDATE API (Date Functions)
//
XDTOOLS_PUBLIC int XDDATE_MonthNum ( LPTSTR szMonth );

// ---------------------------------------------------------------------
// XDSTR API (String Functions)
//
```

```
XDTOOLS_PUBLIC    LPTSTR        XDSTR_Squish ( LPTSTR p );
XDTOOLS_PUBLIC    LPTSTR        XDSTR_StripChar ( LPTSTR p, TCHAR c );
XDTOOLS_PUBLIC    LPTSTR        XDSTR_DirSlashAdd ( LPTSTR sz, TCHAR c );
XDTOOLS_PUBLIC    LPTSTR        XDSTR_DirSlashRemove ( LPTSTR sz, TCHAR c );
XDTOOLS_PUBLIC    LPTSTR        XDSTR_TrimRight ( LPTSTR );
XDTOOLS_PUBLIC    LPTSTR        XDSTR_TrimLeft ( LPTSTR );
XDTOOLS_PUBLIC    LPTSTR        XDSTR_Trim ( LPTSTR );
XDTOOLS_PUBLIC    BOOL   XDAPI_CreatePath ( LPCTSTR ); // calls CreateDirectory() to make a path.

// ------------------------------------------------------------------
// Stuff for messge boxes
//
#ifndef _VXD_SOURCE_
        int             XDTOOLS_PUBLIC XD_MSG ( LPCTSTR szText, UINT uiMsgFlags );
        int             XDTOOLS_PUBLIC XD_QUESTION ( LPCTSTR szText, UINT uiMsgFlags );
        LPCTSTR XDTOOLS_PUBLIC XD_TEXT ( HINSTANCE h, UINT uiResId ); // LOADS A
RESOURCE!
        BOOL   XD_DoHelp ( LPHELPINFO );
        void   XD_DoHelpContext ( CWnd* );
#endif

//
// the calling object needs to supply the resource
// handle for loading the string. So set up a stupid macro
// that will automatically supply this!
//
#define XD_LOADSTRING(x)    XD_TEXT(AfxGetResourceHandle(),(x))

//
// DEBUGGING STUFF
//
#define CATCH_MSG _T("Caught Exception in File %s, Line %d\n\n")
#ifdef _VXD_SOURCE_
        #define XDCATCH dprintf(CATCH_MSG, _T(__FILE__), __LINE__ )
#else
        #define  XDCATCH {    CString s; s.Format(CATCH_MSG, _T(__FILE__), __LINE__ );
AfxMessageBox(s); }
#endif

//
// Ring 0 File I/O
//
#ifdef _VXD_SOURCE_
#define GENERIC_READ                    (0x80000000) /* from WINNT.H */
#define GENERIC_WRITE                   (0x40000000) /* from WINNT.H */
#define CREATE_NEW                      1
#define CREATE_ALWAYS                   2
#define OPEN_EXISTING                   3
#define OPEN_ALWAYS                     4
#define TRUNCATE_EXISTING       5
#define FILE_SHARE_READ                 0x00000001
#define FILE_SHARE_WRITE        0x00000002
#define FILE_SHARE_DELETE       0x00000004      // not supported

HANDLE CreateFile ( LPCTSTR lpFileName,      // pointer to name of the file
                                DWORD dwDesiredAccess,    // access (read-write) mode
                                DWORD dwShareMode,        // share mode
                                void* lpSecAtt,                         // pointer to security
attributes
                                DWORD dwCreateFlags,            // how to create
                                DWORD dwFlagsAndAttributes,   // file attributes
                                HANDLE);
```

```
BOOL CloseHandle ( HANDLE hFile );
BOOL ReadFile ( HANDLE hFile,           // handle of file to read
                void* lpBuffer,         // pointer to buffer that receives data
                DWORD nNumberOfBytesToRead,  // number of bytes to read
                DWORD* lpNumberOfBytesRead, // pointer to number of bytes read
                void* lpOverlapped);   // pointer to structure for data

BOOL ReadFileLine ( HANDLE hFile,                    // handle of file to read
                    BYTE* lpBuffer,                  // pointer to buffer that receives
data
                    DWORD dwBytesToRead,             // number of bytes to read
                    DWORD* dwBytesRead,              // pointer to number of bytes read
                    DWORD* dwOffset);                // pointer to structure for data

BOOL WriteFile ( HANDLE hFile, LPCTSTR lpBuffer, DWORD dwBytesToWrite,
                DWORD* pBytesWritten, void* p);

DWORD       GetFileSize ( HANDLE hFile, DWORD* pdwHigh );
#endif

#endif // !defined(_INC_XDTOOLS_H_)
```

```
//
// Module: xdEngine.h
// Subsystem: X:drive Client Engine (xdEngine.dll)
// Contents: Main include file for the xdEngine subsystem
//
// ---------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ---------------------------------------------------------------
// ---------------------------------------------------------------
//
#ifndef _INC_XDRIVE_ENGINE_H_
#define _INC_XDRIVE_ENGINE_H_

#if _MSC_VER >= 1000
#pragma once
#endif // _MSC_VER >= 1000

#pragma warning (disable : 4100)
#pragma warning (disable : 4201)

#ifdef _XDENGINE_SOURCE_
        #define XDAPI_PUBLIC __declspec( dllexport )
#else
        #define XDAPI_PUBLIC // __declspec( dllimport )
#endif // _XDENGINE_SOURCE_

#pragma pack(1) // byte pack this thing!

#include <xdGlobals.h>

// ---------------------------------------------------------------
// XD_DIRENTRY - directory listing item
//
//      The following structure is used to hold an object in the file listing
// file. Xdrive will generate the file list for the directory and store it
// in the cache directory. That file will contain
// a list of record structures of this type. The .mnd file is generated
// based upon the FTP server specific format in the .idx file in the same
// cache directory.
//
typedef struct _xd_direntry_
{
        USHORT          cb;             // class size, MUST BE FIRST!!!!
  DWORD         dwFileAttributes;
        FILETIME        ftCreationTime;
  FILETIME      ftLastAccessTime;
  FILETIME      ftLastWriteTime;
  DWORD         nFileSizeHigh;
        DWORD           nFileSizeLow;
  TCHAR         cFileName[ XD_LEN_512 ];
        TCHAR           m_szObPerms [ XD_LEN_32 + 1 ];
        BYTE            m_bObOwnerPerms[4];
        BYTE            m_bObGroupPerms[4];
        BYTE            m_bObWorldPerms[4];
} XD_DIRENTRY, * LPXD_DIRENTRY;

#pragma pack()
```


3NSDOCID: <WO_____0133381A1 IA>

```
//
// Return codes
//
typedef UINT    XD_RETCODE;

#define XD_SUCCESS                      (int)0
#define XD_CANCEL                       (int)1
#define XD_ERR_CONNECTFAILED    (int)2          // socket connect failed
#define XD_ERR_LOGINFAILED      (int)3          // bad username/pwd
#define XD_ERR_CONNECTREFUSED   (int)5          // socket connect refused
#define XD_ERR_CANTRESOLVEHOST  (int)6          // cant resolve host
#define XD_ERR_SERVERUPGRADING  (int)7          // upgrading our servers

#define XD_ERR_OTHER                    (int)-1

//
// The following constants are used in the notification structure.
//
typedef enum
{
        XD_NOTIFY_IDLE                  = 0,            // nothing happening here
        XD_NOTIFY_STATUS_MSG    = 1000,         // status msg
        XD_NOTIFY_XFERDATA_DN   = 1001,         // downloading
        XD_NOTIFY_XFERDATA_UP   = 1002,         // uploading
        XD_NOTIFY_QUOTA                 = 1003,         // Update the quota
        XD_NOTIFY_START                 = 1004,         // Start an operation
        XD_NOTIFY_STOP                  = 1005          // Stop an operation
} XD_NOTIFY_CODE;

// ----------------------------------------------------
// XD_NOTIFY - This is our notification structure. The http engine
// will use this structure to pass status information back to the
// invoking method.
//
#pragma pack(1)

typedef struct _xd_notification_
{
        int                     m_iNotifyType;
        TCHAR           m_szMessage [ 1024 + sizeof(TCHAR) ];

        //
        // used for send/receive
        //
        ULONG           m_dwStartTime;          // GetTickCount()/1000
        ULONG           m_dwCurrentTime;        // GetTickCount()/1000

        DWORD                   m_dwCurrentBytes;
        DWORD                   m_dwTotalBytes;

        TCHAR           m_szLocalFileName [ MAX_PATH + sizeof(TCHAR) ];
        TCHAR           m_szRemoteFileName [ MAX_PATH + sizeof(TCHAR) ];
} XD_NOTIFY, *LPXD_NOTIFY;
#pragma pack()
#define XD_NOTIFY_MAX           50

#endif // _INC_XDRIVE_ENGINE_H_
```

```
//
// Module: tdimsgtbl.h
// Subsystem: X:drive Client Engine (xdEngine.dll)
// Contents: TDI Error table.
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by River Front Software
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//

#ifndef __TDIMSGTBL_H
#define __TDIMSGTBL_H

typedef struct
{
        TDI_STATUS    Status;
        int                   WinStatus;
        char          *szMsg;
} INETTDIMSG;

INETTDIMSG TdiMsgTbl[] =
{
        {TDI_SUCCESS, ERROR_SUCCESS, "TDI Success"},
        {TDI_NO_RESOURCES, ERROR_BAD_COMMAND, "No resources."},
        {TDI_ADDR_IN_USE, ERROR_BAD_COMMAND,  "Address already in use."},
        {TDI_BAD_ADDR, ERROR_BAD_COMMAND, "Address given is bad."},
        {TDI_NO_FREE_ADDR, ERROR_BAD_COMMAND, "No addresses available."},
        {TDI_ADDR_INVALID, ERROR_BAD_COMMAND, "Address object is invalid."},
        {TDI_ADDR_DELETED, ERROR_BAD_COMMAND, "Address object was deleted."},
        {TDI_BUFFER_OVERFLOW, ERROR_BAD_COMMAND, "Buffer overflowed."},
        {TDI_BAD_EVENT_TYPE, ERROR_BAD_COMMAND,  "Bad event type."},
        {TDI_BAD_OPTION, ERROR_BAD_COMMAND,  "Bad option or length."},
        {TDI_CONN_REFUSED, ERROR_BAD_COMMAND, "Connection was refused."},
        {TDI_INVALID_CONNECTION, ERROR_BAD_COMMAND,  "Invalid connection."},
        {TDI_ALREADY_ASSOCIATED, ERROR_BAD_COMMAND,  "Connection already associated."},
        {TDI_NOT_ASSOCIATED, ERROR_BAD_COMMAND,  "Connection not associated."},
        {TDI_CONNECTION_ACTIVE,  ERROR_BAD_COMMAND, "Connection is still active."},
        {TDI_CONNECTION_ABORTED, ERROR_BAD_COMMAND,  "Connection was aborted."},
        {TDI_CONNECTION_RESET, ERROR_BAD_COMMAND, "Connection was reset."},
        {TDI_TIMED_OUT,      ERROR_BAD_COMMAND, "Connection timed out."},
        {TDI_GRACEFUL_DISC,          ERROR_BAD_COMMAND, "Received a graceful disconnect."},
        {TDI_NOT_ACCEPTED, ERROR_BAD_COMMAND, "Data not accepted."},
        {TDI_MORE_PROCESSING, ERROR_BAD_COMMAND,  "More processing required."},
        {TDI_INVALID_STATE, ERROR_BAD_COMMAND, "TCB in an invalid state."},
        {TDI_INVALID_PARAMETER,  ERROR_BAD_COMMAND, "An invalid parameter."},
        {TDI_DEST_NET_UNREACH, ERROR_BAD_COMMAND, "Destination net is unreachable."},
        {TDI_DEST_HOST_UNREACH,  ERROR_BAD_COMMAND, "Dest. host is unreachable."},
        {TDI_DEST_UNREACHABLE, ERROR_BAD_COMMAND, "Dest. is unreachable. "},
        {TDI_DEST_PROT_UNREACH,  ERROR_BAD_COMMAND, "Destination protocol is unreachable."},
        {TDI_DEST_PORT_UNREACH,  ERROR_BAD_COMMAND, "Dest. port is unreachable."},
        {TDI_INVALID_QUERY,          ERROR_BAD_COMMAND, "Invalid query type specified."},
        {TDI_REQ_ABORTED, ERROR_BAD_COMMAND,  "Request was aborted for some reason."},
        {TDI_BUFFER_TOO_SMALL, ERROR_BAD_COMMAND, "Buffer was too small."},
        {TDI_CANCELLED,      ERROR_BAD_COMMAND, "The request was cancelled."},
        {TDI_BUFFER_TOO_BIG, ERROR_BAD_COMMAND, "Invalid request."},
        {ERROR_SEM_TIMEOUT, ERROR_SEM_TIMEOUT, "Timed out."},
        {TDI_PENDING, ERROR_BAD_COMMAND,  "Pending"}
```


RNSDOCID: <WO 0133381A1 IA>

```
};

#endif
```

```
//
// Module: tdisock.h
// Subsystem: X:drive Client Engine (xdEngine.dll)
// Contents: TDI Socket header file.
//
// ---------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by River Front Software
// All rights reserved.
// ---------------------------------------------------------------
// ---------------------------------------------------------------
//

#ifndef __TDISOCK_H
#define __TDISOCK_H


#define TDISOCK_TIMEOUT      15000
#define WSADESCRIPTION_LEN     256
#define WSASYS_STATUS_LEN      128
typedef short SHORT;
typedef unsigned short USHORT;
typedef unsigned short ushort;
typedef unsigned int uint;
typedef unsigned long ulong;
typedef unsigned long ULONG;
typedef void (*CTEReqCmpltRtn)(void *Context, long FinalStatus, unsigned int ByteCount);
typedef unsigned char uchar;
typedef struct WSAData {
    WORD            wVersion;
    WORD            wHighVersion;
    char            szDescription[WSADESCRIPTION_LEN+1];
    char            szSystemStatus[WSASYS_STATUS_LEN+1];
    unsigned short  iMaxSockets;
    unsigned short  iMaxUdpDg;
    char FAR *      lpVendorInfo;
} WSADATA;

typedef WSADATA FAR *LPWSADATA;


#define USE_NDIS        1

#include <vtoolscp.h>
#include <crtl.h>

#undef USE_NDIS


#include <tdi.h>
#include <vxdsvc.h>
#include <tdivxd.h>
#include <tdistat.h>

#undef VTDI_Device_ID
#include <vtdi.h>


#define MAKELONG(a, b)     ((LONG)(((WORD)(a)) | ((DWORD)((WORD)(b))) << 16))
#define LOWORD(l)          ((WORD)(l))
```


NSDOCID: <WO_____0133381A1_IA>

```
#define HIWORD(l)       ((WORD)(((DWORD)(l) >> 16) & 0xFFFF))
#define LOBYTE(w)       ((BYTE)(w))
#define HIBYTE(w)       ((BYTE)(((WORD)(w) >> 8) & 0xFF))

/*
 * Structures returned by network data base library, taken from the
 * BSD file netdb.h.  All addresses are supplied in host order, and
 * returned in network order (suitable for use in system calls).
 */

struct  hostent {
    char    FAR * h_name;       /* official name of host */
    char    FAR * FAR * h_aliases;  /* alias list */
    short   h_addrtype;         /* host address type */
    short   h_length;           /* length of address */
    char    FAR * FAR * h_addr_list; /* list of addresses */
#define h_addr  h_addr_list[0]      /* address, for backward compat */
};

/***** Wait for semaphore flags */
#define WAIT_SEMA_FLAGS    0 //BLOCK_SVC_INTS | BLOCK_POLL

/***** Macro to call wait on semaphore function */
#define SEMAPHORE_WAIT( hSem, nTimeout )    \
        WaitOnSemaphore( s, hSem, #hSem, nTimeout )


/***** Checks for valid TDI status */
#define TDI_CHECKSTATUS(s)  if ( (s) != TDI_SUCCESS )          \
                                                               {
                \
                                                               errdebug( DBG_log("ERROR - File: %s
Line:%d TDI [%d] - %s\n",          \
                                                                       __FILE__, __LINE__, (s),
MapTdiToString(s)); );             \
                                                               goto Exit;
                                                                       \
                                                               }

/***** Destroys a semaphore */
#define SEMAPHORE_SAFE_DESTROY(hSem)    \
                if (hSem)                                              \
                        {                                                      \
                        vbsdebug( DBG_log("Destroy Semaphore %s", #hSem); ); \
                        UtilSemDestroy(hSem);   \
                        hSem = 0;                                      \
                        }


/***** Signals a semaphore */
#define SEMAPHORE_SAFE_SIGNAL(hSem)      \
                if (hSem)                                      \
                        {                                              \
                        vbsdebug( DBG_log("*** Signal Semaphore %s", #hSem); ); \
                        vbsdebug( DBG_log_hex_long( hSem ); );                  \
                        Signal_Semaphore_No_Switch( hSem );
                \
                        }       \
                else    \
                        {       \
                        vbsdebug( DBG_log("*** NO SEMAPHORE TO SIGNAL %s", #hSem); );     \
                        }
```

```
/*
 * Basic system type definitions, taken from the BSD file sys/types.h.
 */
typedef unsigned char   u_char;
typedef unsigned short  u_short;
typedef unsigned int    u_int;
typedef unsigned long   u_long;


/*
 * Constants and structures defined by the internet system,
 * Per RFC 790, September 1981, taken from the BSD file netinet/in.h.
 */

/*
 * Protocols
 */
#define IPPROTO_IP          0           /* dummy for IP */
#define IPPROTO_ICMP        1           /* control message protocol */
#define IPPROTO_IGMP        2           /* internet group management protocol */
#define IPPROTO_GGP         3           /* gateway^2 (deprecated) */
#define IPPROTO_TCP         6           /* tcp */
#define IPPROTO_PUP         12          /* pup */
#define IPPROTO_UDP         17          /* user datagram protocol */
#define IPPROTO_IDP         22          /* xns idp */
#define IPPROTO_ND          77          /* UNOFFICIAL net disk proto */

#define IPPROTO_RAW         255         /* raw IP packet */
#define IPPROTO_MAX         256



/*
 * Port/socket numbers: network standard functions
 */
#define IPPORT_ECHO         7
#define IPPORT_DISCARD      9
#define IPPORT_SYSTAT       11
#define IPPORT_DAYTIME      13
#define IPPORT_NETSTAT      15
#define IPPORT_FTP          21
#define IPPORT_TELNET       23
#define IPPORT_SMTP         25
#define IPPORT_TIMESERVER   37
#define IPPORT_NAMESERVER   42
#define IPPORT_WHOIS        43
#define IPPORT_MTP          57

/*
 * Port/socket numbers: host specific functions
 */
#define IPPORT_TFTP         69
#define IPPORT_RJE          77
#define IPPORT_FINGER       79
#define IPPORT_TTYLINK      87
#define IPPORT_SUPDUP       95

/*
 * UNIX TCP sockets
 */
#define IPPORT_EXECSERVER   512
```

```
#define IPPORT_LOGINSERVER    513
#define IPPORT_CMDSERVER      514
#define IPPORT_EFSSERVER      520

/*
 * UNIX UDP sockets
 */
#define IPPORT_BIFFUDP        512
#define IPPORT_WHOSERVER      513
#define IPPORT_ROUTESERVER    520
                        /* 520+1 also used */

/*
 * Ports < IPPORT_RESERVED are reserved for
 * privileged processes (e.g. root).
 */
#define IPPORT_RESERVED       1024

/*
 * Link numbers
 */
#define IMPLINK_IP            155
#define IMPLINK_LOWEXPER      156
#define IMPLINK_HIGHEXPER     158

/*
 * Internet address (old style... should be updated)
 */
struct in_addr {
    union {
        struct { u_char s_b1,s_b2,s_b3,s_b4; } S_un_b;
        struct { u_short s_w1,s_w2; } S_un_w;
        u_long S_addr;
    } S_un;
#define s_addr  S_un.S_addr
                    /* can be used for most tcp & ip code */
#define s_host  S_un.S_un_b.s_b2
                    /* host on imp */
#define s_net   S_un.S_un_b.s_b1
                    /* network */
#define s_imp   S_un.S_un_w.s_w2
                    /* imp */
#define s_impno S_un.S_un_b.s_b4
                    /* imp # */
#define s_lh    S_un.S_un_b.s_b3
                    /* logical host */
};

#define htons(host) ( (((host) & 0xff) << 8) | ((host) >> 8) )
ULONG htonl( ULONG hostlong );

/*
 * Definitions of bits in internet address integers.
 * On subnets, the decomposition of addresses to host and net parts
 * is done according to subnet mask, not the masks here.
 */
#define IN_CLASSA(i)          (((long)(i) & 0x80000000) == 0)
#define IN_CLASSA_NET         0xff000000
#define IN_CLASSA_NSHIFT      24
#define IN_CLASSA_HOST        0x00ffffff
#define IN_CLASSA_MAX         128
```

```
#define IN_CLASSB(i)        (((long)(i) & 0xc0000000) == 0x80000000)
#define IN_CLASSB_NET       0xffff0000

// end first 30 pages aj

                        int iMax = i;
                        CString* pArray = new CString[iMax];
                        i=0;
                        while (rl.RegEnumKey(i++,szVal,dwCnt))
                                pArray[i-1] = szVal;
                        rl.RegClose();
                        for (i=0; i<iMax; i++)
                        {
                                CString str = pArray[i];
                                CString strTmp;
                                strTmp.Format(_T("%s\\%s"), (LPCTSTR)szSubKey, (LPCTSTR)str);
                                rl.RegDeleteKey(hHive,strTmp);
                        }
                        delete[] pArray;

                }

                //
                // then Delete the key
                //
                m_lRetCode = ::RegDeleteKey ( hHive, szSubKey );
#endif

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        //
        // bOK is TRUE if ERROR_SUCCESS was returned
        //
        bOK = (ERROR_SUCCESS == m_lRetCode);

        return bOK;
} // End of RegDelete()

// ----------------------------------------------------------------
//  Method: RegClose()
// Purpose: the the registry is open, close it.
//
BOOL xdRegistry::RegClose ( )
{
        BOOL bOK = TRUE;

#ifndef _VXD_SOURCE_
        try
        {
#endif

                if ( m_hKey != NULL )
                        ::RegCloseKey ( m_hKey );
```


BNSDOCID: <WO 0133381A1 IA>

```
#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        //
        // unconditionally null the key
        //
        m_hKey = NULL;

        return bOK;
} // End of RegClose()

// ----------------------------------------------------------------------
//  Method: RegEnumStr()
// Purpose: enumerates subkeys for a key. i is the index to get
//
BOOL xdRegistry::RegEnumStr ( int i, LPCTSTR szValue, UINT uiLenWithNull )
{
        BOOL   bOK = TRUE;
        DWORD          dwIdx = i;
        DWORD          dwSize = (DWORD) uiLenWithNull;
        LPBYTE         pValue = (LPBYTE) szValue;

        //
        // Make sure that the registry is open
        //
        if (m_hKey == NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif
                //
                // initialize the string to be empty
                //
                memset ( pValue, 0, uiLenWithNull );

#ifdef _VXD_SOURCE_
                m_lRetCode = ::RegEnumKey (     m_hKey,                 // hive/key
                                                dwIdx,                  // index
of the key to get
                                                (LPTSTR)pValue,         // key
name will go here
                                                dwSize);        // the size of the
buffer
#else
        #ifdef _UNICODE
                CString sTmp;
                TCHAR szBuf = (BYTE*)sTmp.GetBuffer(512);
                m_lRetCode = ::RegEnumKeyA (m_hKey,             // hive/key
                                                dwIdx,          // index of the
key to get
                                                (char*)buf,     // key name will
go here
                                                dwSize);// the size of the buffer
                CString fred(buf);
```

```
                _tcscpy((LPTSTR)szValue,fred);
        #else
                m_lRetCode = ::RegEnumKey (     m_hKey,                 // hive/key
                                                                        dwIdx,                  // index
of the key to get
                                                                        (LPTSTR)pValue,         // key
name will go here
                                                                        dwSize);        // the size of the
buffer
        #endif
#endif

                bOK = (ERROR_SUCCESS == m_lRetCode);
                if (bOK != FALSE)
                {
                        //
                        // terminate the string...ensure that we dont go past
                        // the max lenth of the string!
                        //
                        ((LPTSTR)szValue) [ min(dwSize,uiLenWithNull) ] = 0;
                }

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegEnumStr()

// ----------------------------------------------------------------
// Method: RegGetStr()
// Purpose: retrieves a string value from the registry. NOTE: The length
//                      of the string MUST include space for the NULL terminator since
//                      this character IS read from the registry. So, if you want to
//                      read `ABCD` from the registry, supply a uiLenWithNull of five(5).
//
BOOL xdRegistry::RegGetStr ( LPCTSTR szName, LPCTSTR szValue, UINT uiLenWithNull )
{
        BOOL   bOK = TRUE;
        DWORD          dwType = 0;
        DWORD          dwSize  = (DWORD) uiLenWithNull;
        LPBYTE         pValue  = (LPBYTE) szValue;

        //
        // Make sure that the registry is open
        //
        if (m_hKey == NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif
                //
                // initialize the string to be empty
                //
                memset ( pValue, 0, uiLenWithNull );
```


BNSDOCID: <WO 01333381A1 IA>

```
#ifdef _VXD_SOURCE_
                m_lRetCode = ::RegQueryValueEx (m_hKey,                 // hive/key
        // value name                                                   (LPTSTR)szName,
        // reserved                                                     NULL,
        // the REG_* type                                               &dwType,
        // pointer to the storage area                                  pValue,
        // # to fetch (WITH NULL)                                       &dwSize);
#else
        #ifdef _UNICODE
                char sShort[512];
                char sDefault[512];
                char buf[512];
                BOOL b;
                *sDefault = *sShort=0;
                WideCharToMultiByte     ( CP_ACP, 0, szName, -1, sShort, 512, sDefault, &b );
                m_lRetCode = ::RegQueryValueExA (m_hKey,                // hive/key
        // value name                                                   sShort,
                // reserved                                             0,
        // the REG_* type                                               &dwType,
pointer to the storage area                                             (LPBYTE)buf,    //
        // # to fetch (WITH NULL)                                       &dwSize);
                CString fred(buf);
                _tcscpy((LPTSTR)szValue,fred);
        #else
                m_lRetCode = ::RegQueryValueEx (m_hKey,                 // hive/key
name                                                                    szName,         // value
        // reserved                                                     0,
REG_* type                                                              &dwType,        // the
pointer to the storage area                                             pValue,         //
fetch (WITH NULL)                                                       &dwSize);       // # to
        #endif
#endif

                bOK = (ERROR_SUCCESS == m_lRetCode);
                if ( bOK == TRUE )
                {
                        //
                        // make sure that it was a string value which was returned.
                        // If not, Delete the entry so we can regen it as a string
                        //
                        if (REG_SZ != dwType)
                                ::RegDeleteValue ( m_hKey, (LPTSTR)szName );

                        //
                        // terminate the string...ensure that we dont go past
                        // the max lenth of the string!
```

```
                        //
                        ((LPTSTR)szValue) [ min(dwSize,uiLenWithNull) ] = 0;
                }
#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegGetStr()

// ----------------------------------------------------------------------
// Method: RegPutStr()
// Purpose: write the information to the registry (write the NULL TOO).
//
BOOL xdRegistry::RegPutStr ( LPCTSTR szName, LPCTSTR szValue )
{
        BOOL   bOK = TRUE;

        //
        // Make sure that the registry is open
        //
        if (m_hKey == NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif


#ifdef _VXD_SOURCE_
                //
                // move everything into a temp buffer so that we can ensure
                // the existance of a NULL byte on the end of the string
                //
                CString sTmp;
                LPTSTR szBuf = sTmp.GetBuffer(512);
                memset ( szBuf, 0, 512 );
                memcpy ( szBuf, szValue, min(sTmp.GetAllocLength()-1,strlen(szValue)) );

                //
                // remember...always write the NULL byte too!
                //
                UINT    uiLenWithNull = strlen(szBuf) + 1;
                m_lRetCode = ::RegSetValueEx (  m_hKey,  (LPTSTR)szName, 0, REG_SZ,
                                                                        (LPBYTE)szBuf,
uiLenWithNull );
#else
        #ifdef _UNICODE
                char sShort[512];
                char sShortVal[512];
                char sDefault[512];
                BOOL b;
                *sDefault = *sShort=0;
                WideCharToMultiByte     ( CP_ACP, 0, szName, -1, sShort, 512, sDefault, &b );
                WideCharToMultiByte     ( CP_ACP, 0, szValue, -1, sShortVal, 512, sDefault, &b );
                m_lRetCode = ::RegSetValueExA (m_hKey, sShort, 0, REG_SZ,
```

```
(LPBYTE) sShortVal,
 strlen(sShortVal)+1 );
        #else
                CString sTmp;
                LPTSTR szBuf = (LPTSTR)sTmp.GetBuffer(1024);
                memset ( szBuf, 0, 1024 );
                memcpy ( szBuf, szValue, min(1023,_tcslen(szValue))*sizeof(TCHAR) );
                szBuf[_tcslen(szValue)] = 0;

                //
                // remember...always write the NULL byte too!
                //
                UINT    uiLenWithNull = _tcslen(szBuf) + 1;

                m_lRetCode = ::RegSetValueEx (  m_hKey, szName, 0, REG_SZ,
                                                                (LPBYTE) szBuf,
 uiLenWithNull );
        #endif
#endif

                bOK = (ERROR_SUCCESS == m_lRetCode);

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegPutStr()

// ----------------------------------------------------------------------
// Method: RegGetNum()
// Purpose: Retrieves a number from the registry. there are various
//                      overloads for different types.
//
BOOL xdRegistry::RegGetNum(LPCTSTR sName, DWORD& dwValue)
{
        BOOL   bOK = TRUE;
        CString sTmp;
        LPTSTR          szBuf = sTmp.GetBuffer(XD_LEN_64);
        memset ( szBuf, 0, XD_LEN_64 );
        DWORD  dwType = 0;
        DWORD           dwSize = XD_LEN_64-1;

        //
        // Make sure that the registry is open
        //
        if (m_hKey == NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif

#ifdef _VXD_SOURCE_
                bOK = RegGetStr ( sName, szBuf, sTmp.GetAllocLength()-1 );
                if ( bOK == TRUE )
```

```
                    dwValue = (DWORD)atol((LPTSTR)szBuf);
#else
        #ifdef _UNICODE
                char sShort[512];
                char sDefault[512];
                char bufTmp[512];
                BOOL b=0;
                *sDefault = *sShort=0;
                WideCharToMultiByte     ( CP_ACP, 0, sName, -1, sShort, 512, sDefault, &b );
                m_lRetCode = ::RegQueryValueExA (m_hKey,                // hive/key
                                                                        sShort,
        // value name
                                                                        0,
                // reserved
                                                                        &dwType,
        // the REG_* type
                                                                        (LPBYTE)bufTmp,
        // pointer to the storage area
                                                                        &dwSize);
        // # to fetch (WITH NULL)
                bOK = (ERROR_SUCCESS == m_lRetCode);
                if ( bOK == TRUE )
                {
                        if ( dwType == REG_SZ )
                                dwValue = (DWORD)atol(bufTmp);
                }
        #else
                m_lRetCode = ::RegQueryValueEx (        m_hKey,
                                                                        sName,
                                                                        0,
                                                                        &dwType,
                                                                        (BYTE*)szBuf,
                                                                        &dwSize );
                bOK = (ERROR_SUCCESS == m_lRetCode);
                if ( bOK == TRUE )
                {
                        if ( dwType == REG_SZ )
                                dwValue = (DWORD)_ttol((LPTSTR)szBuf);
                        if ( dwType == REG_DWORD )
                                dwValue = * ((DWORD*)szBuf);
                }
        #endif
#endif

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegGetNum()

// ----------------------------------------------------------------
//  Method: RegGetNum()
// Purpose: Retrieves a number from the registry. UINT version
//
BOOL xdRegistry::RegGetNum(LPCTSTR sName, UINT& uiValue)
{
```

```
        DWORD           dwValue = uiValue;
        BOOL   bOK = RegGetNum(sName,dwValue);

        uiValue = (UINT) dwValue;

        return bOK;
} // End of RegGetNum()

// ----------------------------------------------------------------
// Method: RegGetNum()
// Purpose: Retrieves a number from the registry. BOOL version
//
BOOL xdRegistry::RegGetNum(LPCTSTR sName, BOOL& bValue)
{
        DWORD           dwValue = bValue;
        BOOL   bOK = RegGetNum(sName,dwValue);

        bValue = (BOOL) dwValue;

        return bOK;
} // End of RegGetNum()

// ----------------------------------------------------------------
// Method: RegGetNum()
// Purpose: Retrieves a number from the registry. WORD VERSION.
//
BOOL xdRegistry::RegGetNum(LPCTSTR sName, WORD& wValue)
{
        DWORD           dwValue = wValue;
        BOOL   bOK = RegGetNum(sName,dwValue);

        wValue = (WORD) dwValue;

        return bOK;
} // End of RegGetNum()

// ----------------------------------------------------------------
// Method: RegPutNum()
// Purpose: writes a numeric value to the registry.
//
BOOL xdRegistry::RegPutNum(LPCTSTR sName, DWORD dwValue)
{
        BOOL   bOK = TRUE;

        //
        // make sure the key is open
        //
        if (m_hKey==NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif

#ifdef _VXD_SOURCE_
                CString sTmp;
                BYTE* szBuf = (BYTE*)sTmp.GetBuffer(132);
                sprintf( (LPTSTR)szBuf, _T("%lu"), dwValue);
                UINT uiLenWithNull = strlen((LPTSTR)szBuf) + 1; // ADD THE NULL!!!!!!!
                m_lRetCode = ::RegSetValueEx (  m_hKey, (LPTSTR)sName,
```

```
                                                                    0, REG_SZ, szBuf,
uiLenWithNull );
                bOK = (ERROR_SUCCESS == m_lRetCode);
#else
        #ifdef _UNICODE
                char sShort[512];
                char sDefault[512];
                BOOL b;
                *sDefault = *sShort=0;
                WideCharToMultiByte     ( CP_ACP, 0, sName, -1, sShort, 512, sDefault, &b );
                sprintf( sDefault, "%lu", dwValue );
                m_lRetCode = ::RegSetValueExA (m_hKey, sShort, 0, REG_SZ,
                                                                    (LPBYTE)sDefault,
strlen(sDefault)+1 );
        #else
                CString sTmp;
                LPTSTR szBuf = sTmp.GetBuffer(XD_LEN_64);
                wsprintf( (LPTSTR)szBuf, _T("%lu"), dwValue);
                UINT uiLenWithNull = _tcslen((LPTSTR)szBuf) + 1; // ADD THE NULL!!!!!!!
                m_lRetCode = ::RegSetValueEx (  m_hKey,
                                                                    sName,
                                                                    0,
                                                                    REG_SZ,
                                                                    (BYTE*)szBuf,
                                                                    uiLenWithNull);
        #endif
#endif

                bOK = (ERROR_SUCCESS == m_lRetCode);

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegPutNum()

// ----------------------------------------------------------------
// Method: RegDeleteValue()
// Purpose:
//
BOOL xdRegistry::RegDeleteValue ( LPCTSTR szValue )
{
        BOOL   bOK = TRUE;

        //
        // make sure the key is open
        //
        if (m_hKey==NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif

                m_lRetCode = ::RegDeleteValue (  m_hKey, (LPTSTR)szValue );
```


3NSDOCID: <WO 01333381A1 IA>

```
                bOK = (ERROR_SUCCESS == m_lRetCode);

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegDeleteValue()

// ----------------------------------------------------------------
//  Method: RegEnumVal()
// Purpose: enumerates values for a key. i is the index to get
//
BOOL xdRegistry::RegEnumVal ( int i, LPCTSTR szValueName, UINT uiNameLenWithNull,
                                                                LPCTSTR szValueData, UINT
uiDataLenWithNull)
{
        BOOL   bOK = TRUE;
        DWORD          dwIdx = i;
        DWORD          dwSize = (DWORD) uiNameLenWithNull;
        DWORD  dwDataSize = (DWORD)uiDataLenWithNull;
        LPBYTE         pValue = (LPBYTE) szValueName;
        LPBYTE  pDataValue = (LPBYTE) szValueData;

        //
        // make sure the key is open
        //
        if (m_hKey==NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif

        //
        // initialize the string to be empty
        //
        memset ( pValue, 0, uiNameLenWithNull );
        memset ( pDataValue, 0, uiDataLenWithNull );

#ifdef _VXD_SOURCE_
                m_lRetCode = ::RegEnumValue(m_hKey,             // hive/key
dwIdx,                  // index
of the value to get
(LPTSTR)pValue,         //
valuename will go here
&dwSize,                // the
size of the buffer
0,
        // reserved,
NULL,                   //
address of type code
pDataValue,
&dwDataSize);

#else
                m_lRetCode = ::RegEnumValue(m_hKey,             // hive/key
```

```
                                                        dwIdx,          // index
of the value to get
                                                        (LPTSTR)pValue, //
valuename will go here
                                                        &dwSize,        // the
size of the buffer
                                                        0,
        // reserved,
                                                        NULL,           //
address of type code
                                                        pDataValue,
                                                        &dwDataSize);
#endif

                bOK = (ERROR_SUCCESS == m_lRetCode);
                if ( bOK == TRUE )
                {
                        //
                        // terminate the string...ensure that we dont go past
                        // the max lenth of the string!
                        //
                        ((LPTSTR)szValueName) [ min(dwSize,uiNameLenWithNull) ] = 0;
                        ((LPTSTR)szValueData) [ min(dwDataSize,uiDataLenWithNull) ] = 0;
                }

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegEnumVal()

// ----------------------------------------------------------------
//  Method: RegPutBin()
// Purpose: write the information to the registry
//
BOOL xdRegistry::RegPutBin ( LPCTSTR szName, BYTE* pBuffer, UINT uiLength )
{
        BOOL   bOK = TRUE;

        //
        // make sure the key is open
        //
        if (m_hKey==NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif
                //
                // move everything into a temp buffer so that we can ensure
                // the existance of a NULL byte on the end of the string
                //
                CString sTmp;
                LPTSTR szBuf = sTmp.GetBuffer(132);
                memset ( szBuf, 0, 132 );
```

```
                memcpy ( szBuf, pBuffer, min(sTmp.GetAllocLength()-1,uiLength) );

                m_lRetCode = ::RegSetValueEx (  m_hKey,
                                                                (LPTSTR)szName,
                                                                0,
                                                                REG_BINARY,
                                                                (LPBYTE) szBuf,
                                                                uiLength );
                bOK = (ERROR_SUCCESS == m_lRetCode);

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegPutBin()

// ----------------------------------------------------------------
// Method: RegEnumKey()
// Purpose: enumerates values for a key. i is the index to get
//
BOOL xdRegistry::RegEnumKey ( int i, LPCTSTR szValueName, UINT uiNameLenWithNull)
{
        BOOL   bOK = TRUE;
        DWORD          dwIdx = i;
        DWORD          dwSize = (DWORD) uiNameLenWithNull;
        LPBYTE         pValue = (LPBYTE) szValueName;

        //
        // make sure the key is open
        //
        if (m_hKey==NULL)
                return FALSE;

#ifndef _VXD_SOURCE_
        try
        {
#endif
                //
                // initialize the string to be empty
                //
                memset ( pValue, 0, uiNameLenWithNull );

#ifdef _VXD_SOURCE_
                m_lRetCode = ::RegEnumKey(m_hKey,               // hive/key
                                                        dwIdx,          // index of the
value to get
                                                        (LPTSTR)pValue, // valuename will
go here
                                                        dwSize);        // the size of the
buffer
#else
                m_lRetCode = ::RegEnumKey(m_hKey,       // hive/key
                                                        dwIdx,          // index of the
value to get
                                                        (LPTSTR)pValue, // valuename will
go here
```

```
                                                    dwSize);        // the size of the
buffer
#endif
                bOK = (ERROR_SUCCESS == m_lRetCode);
                if (bOK==TRUE)
                {
                        //
                        // terminate the string...ensure that we dont go past
                        // the max lenth of the string!
                        //
                        ((LPTSTR)szValueName) [ min(dwSize,uiNameLenWithNull) ] = 0;
                }

#ifndef _VXD_SOURCE_
        }
        catch(...)
        {
                XDCATCH;
                bOK = FALSE;
        }
#endif

        return bOK;
} // End of RegEnumKey()
```

```
//
// Module: xdFileIO.cpp
// Subsystem: X:drive Tools Library (xdTools.dll)
// Contents: Redefinitions for the FILE IO functions
//
// ---------------------------------------------------------------------
// Copyright (c) 1999 by X:drive(tm), Inc.
// Portions Copyright (c) 1996-1999 by KnoWare(r), Inc.
// All rights reserved.
// ---------------------------------------------------------------------
// ---------------------------------------------------------------------
//
#include "stdafx.h"
#include <xdGlobals.h>              // X:drive system wide globals
#include <xdTools.h>

#ifdef _DEBUG
        #undef THIS_FILE
        static char BASED_CODE THIS_FILE[] = __FILE__;
#endif

#ifdef _VXD_SOURCE_
        #include LOCKED_CODE_SEGMENT
        #include LOCKED_DATA_SEGMENT
#endif

#ifdef _VXD_SOURCE_
// ---------------------------------------------------------------------
// Function: CreateFile()
// Purpose: This API function maps the standard Win32 CreateFile function
//                      to the Ring-0 R0_OpenCreateFile() call.
// Returns: INVALID_HANDLE_VALUE - bad
//                      something else - good!
//
HANDLE CreateFile ( LPCTSTR lpFileName,     // pointer to name of the file
                                        DWORD dwDesiredAccess,  // access (read-write) mode
                                        DWORD dwShareMode,      // share mode
                                        void* lpSecAtt,                 --      // pointer to security
attributes
                                        DWORD dwCreateFlags,            // how to create
                                        DWORD dwFlagsAndAttributes,     // file attributes
                                        HANDLE)
{
        HANDLE      h = INVALID_HANDLE_VALUE;
        WORD  wError = 0;
        WORD  wMode = 0;
        BYTE   action = 0;

        switch (dwDesiredAccess)
        {
        case GENERIC_READ:
                wMode = OPEN_ACCESS_READONLY;
                break;
        case GENERIC_WRITE:
                wMode = OPEN_ACCESS_WRITEONLY;
                break;
        default:
                wMode = OPEN_ACCESS_READWRITE;
                break;
        }
```


PNSDOCID: <WO 0133381A1 IA>

```
        //
        // file sharing not supported!
        //
        wMode |= OPEN_SHARE_COMPATIBLE;

        //
        // Create Attributes
        //
        switch ( dwCreateFlags )
        {
        case CREATE_NEW: // create New file. fail if file exists
                action = ACTION_IFEXISTS_FAIL | ACTION_IFNOTEXISTS_CREATE;
                break;
        case CREATE_ALWAYS: // create New file. overwrite if exists
                action = ACTION_IFEXISTS_TRUNCATE | ACTION_IFNOTEXISTS_CREATE;
                break;
        case OPEN_EXISTING: // open file, fail if the file does not exists
                action = ACTION_IFEXISTS_OPEN | ACTION_IFNOTEXISTS_FAIL;
                break;
        case OPEN_ALWAYS: // open file. if !exists, create
                action = ACTION_IFEXISTS_OPEN | ACTION_IFNOTEXISTS_CREATE;
                break;
        case TRUNCATE_EXISTING: // open&truncate file. fail if it does not exist
                action = ACTION_IFEXISTS_OPEN | ACTION_IFEXISTS_TRUNCATE |
ACTION_IFNOTEXISTS_FAIL;
                break;
        }

        h = R0_OpenCreateFile(1,(LPTSTR)lpFileName,wMode,
                                                ATTR_NORMAL,action,R0_NO_CACHE,&wError,
&action);
        return h;
} // End of CreateFile()

// ---------------------------------------------------------------
// Function: ReadFile()
// Purpose: This API function maps the standard Win32 ReadFile function
//                      to the Ring-0 R0_ReadFile() call.
// Returns: TRUE - Good read
//                      FALSE - Bad Read
//
BOOL ReadFile ( HANDLE hFile, void* lpBuffer, DWORD dwBytesToRead,
                        DWORD* pdwBytesRead, void* pdwOffset)
{
        WORD wError = 0;
        DWORD dwOffset = 0;

        if ( pdwOffset )
                dwOffset = *((DWORD*)pdwOffset);

        *pdwBytesRead = R0_ReadFile ( TRUE, hFile, lpBuffer, dwBytesToRead,
                                                                dwOffset, &wError );
        return ( wError == 0 );
} // End of ReadFile()

// ---------------------------------------------------------------
// Function: WriteFile()
// Purpose: This API function maps the standard Win32 WriteFile function
//                      to the Ring-0 R0_WriteFile() call.
// Returns: TRUE - Good write
//                      FALSE - Bad write
```


3NSDOCID: <WO_____0133381A1_IA>

```
//
BOOL WriteFile ( HANDLE hFile, LPCTSTR lpBuffer, DWORD dwBytesToWrite,
                                DWORD* pBytesWritten, void* p)
{
        WORD  wError = 0;
        DWORD          dwFilePos = R0_GetFileSize(hFile,&wError);
        *pBytesWritten = R0_WriteFile ( TRUE, hFile, (void*)lpBuffer, dwBytesToWrite,
                                                                        dwFilePos, &wError );
        return (wError == 0);
} // End of WriteFile()

// ---------------------------------------------------------------------
// Function: CloseHandle()
// Purpose: This API function maps the standard Win32 CloseHandle function
//                        to the Ring-0 R0_CloseFile() call.
// Returns: TRUE - success
//                        FALSE - failure
//
BOOL CloseHandle ( HANDLE hFile )
{
        WORD wError = 0;
        return R0_CloseFile ( hFile, &wError );
} // End of CloseHandle()

// ---------------------------------------------------------------------
// Function: GetFileSize()
// Purpose: This API function maps the standard Win32 GetFileSize function
//                        to the Ring-0 R0_GetFileSize() call.
// Returns: TRUE - success
//                        FALSE - failure
//
DWORD GetFileSize ( HANDLE hFile, DWORD* pdwHigh )
{
        WORD wError = 0;
        return R0_GetFileSize ( hFile, &wError );
} // End of GetFileSize()


// ---------------------------------------------------------------------
// Function: ReadFileLine()
// Purpose: This API function maps the standard Win32 ReadFile function
//                        to the Ring-0 R0_ReadFile() call.
// Returns: TRUE - Good read
//                        FALSE - Bad Read
//
BOOL ReadFileLine ( HANDLE hFile, BYTE* lpBuffer,
                                DWORD dwBytesToRead,
                                        DWORD* pdwBytesRead,
                                        DWORD* pdwOffset )
{
        WORD wError = 0;
        DWORD dwOffset = 0;

        if ( pdwOffset )
                dwOffset = *((DWORD*)pdwOffset);

        //
        // Check for EOF
        //
        if ( dwOffset >= R0_GetFileSize(hFile,&wError) )
                return FALSE;
```

```
        // *pdwBytesRead = R0_ReadFile ( TRUE, hFile, lpBuffer, dwBytesToRead,
        //                                                      dwOffset, &wError );

        memset ( lpBuffer, 0, dwBytesToRead );

        int iTmpBytesRead = 1;
        BOOL bFoundEOL = FALSE;
        int i=0;
        for ( i=0; (iTmpBytesRead != 0) && (i<dwBytesToRead) &&
                                        (wError == 0) && (bFoundEOL==FALSE); i++ )
        {
                iTmpBytesRead = R0_ReadFile ( TRUE, hFile, &(lpBuffer[i]), 1, dwOffset+i, &wError );
                if ((iTmpBytesRead != 0) &&      (wError == 0))
                {
                        if ( lpBuffer[i] == chNL )
                                bFoundEOL = TRUE;
                }
        }

        *pdwBytesRead = i;

        return ( wError == 0 );
} // End of ReadFileLine()
#endif
```


NSDOCID: <WO_____0133381A1_IA>